mallcom®

FROM **INDIA**
FOR THE
WORLD

COLLECTION 2026


8 Head Protection
22 Hand Protection

mallcom®

98 Body Protection

154 Feet Protection

Our **Vision**

Mallcom's vision is to reach the highest levels in quality, innovation, reliability and perfection, through its products. We believe that our integrity is what will carve out a firm presence for us in the world of PPE.

Who are **We**?

Mallcom India Limited, is a pioneer in Personal Protection Equipment (PPE). We have been manufacturing, exporting and distributing a wide range of head-to-toe Personal Protective Equipment (PPE) since 1983. At Mallcom, our assortment of safety gear offers our clients a one-stop solution for all the safety concerns.

As an integrated manufacturer of PPE, we offer an entire line of affordable PPEs, without compromising on quality. This has been one of the main reasons, why our reliability on the quality of protection and safety equipment has been esteemed in the industry. Leveraging our experience, we feel confident that we will always exceed our customers' expectations in meeting their needs.

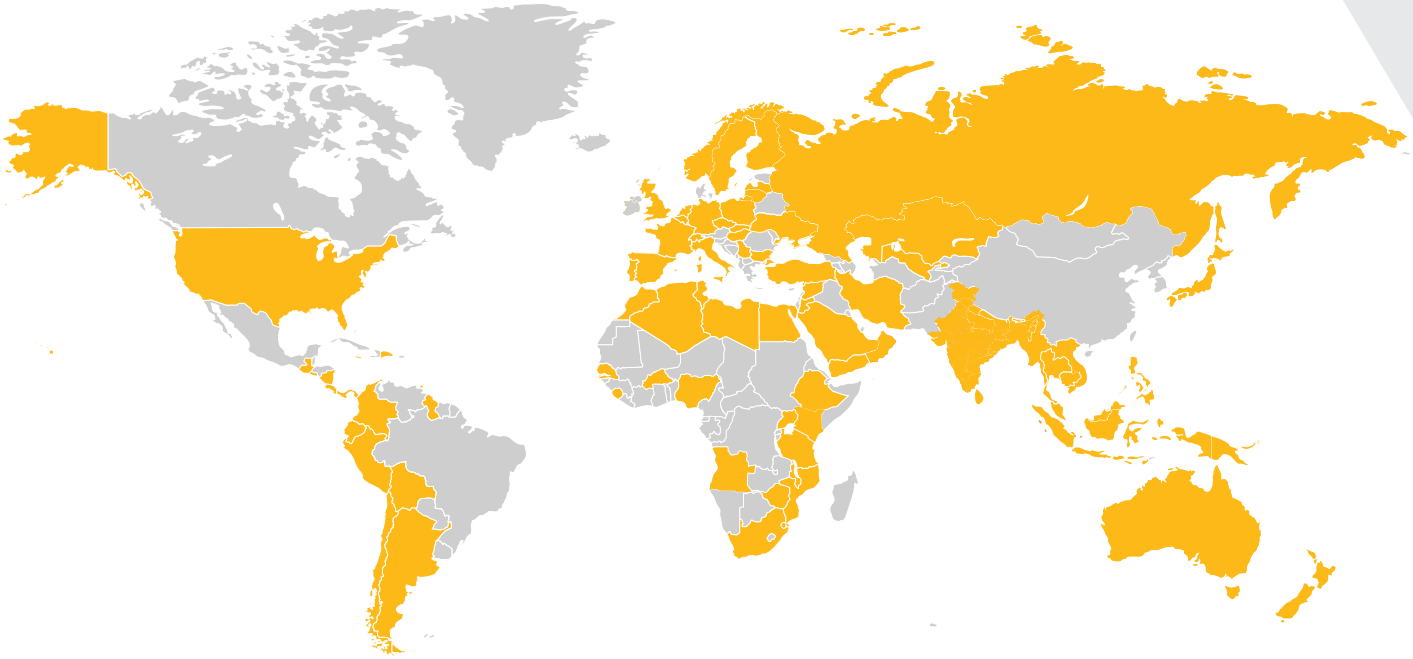
Needless to say, we also take great pride in our ability to customise our products according to the required specifications. With a goal to provide every workforce the world of superior products at the most competitive prices, our products are designed with the finest materials and crafted with attention-to-detail.

Facility Accreditations

GLOBAL **FOOTPRINT**

Mallcom is present across 50+ nations worldwide. Through the years our innovative products have made us leader in the f ield of Personal Protective Equipment. We share our knowledge and progress regularly with dealers to ensure the best experience for our clients.

We are here

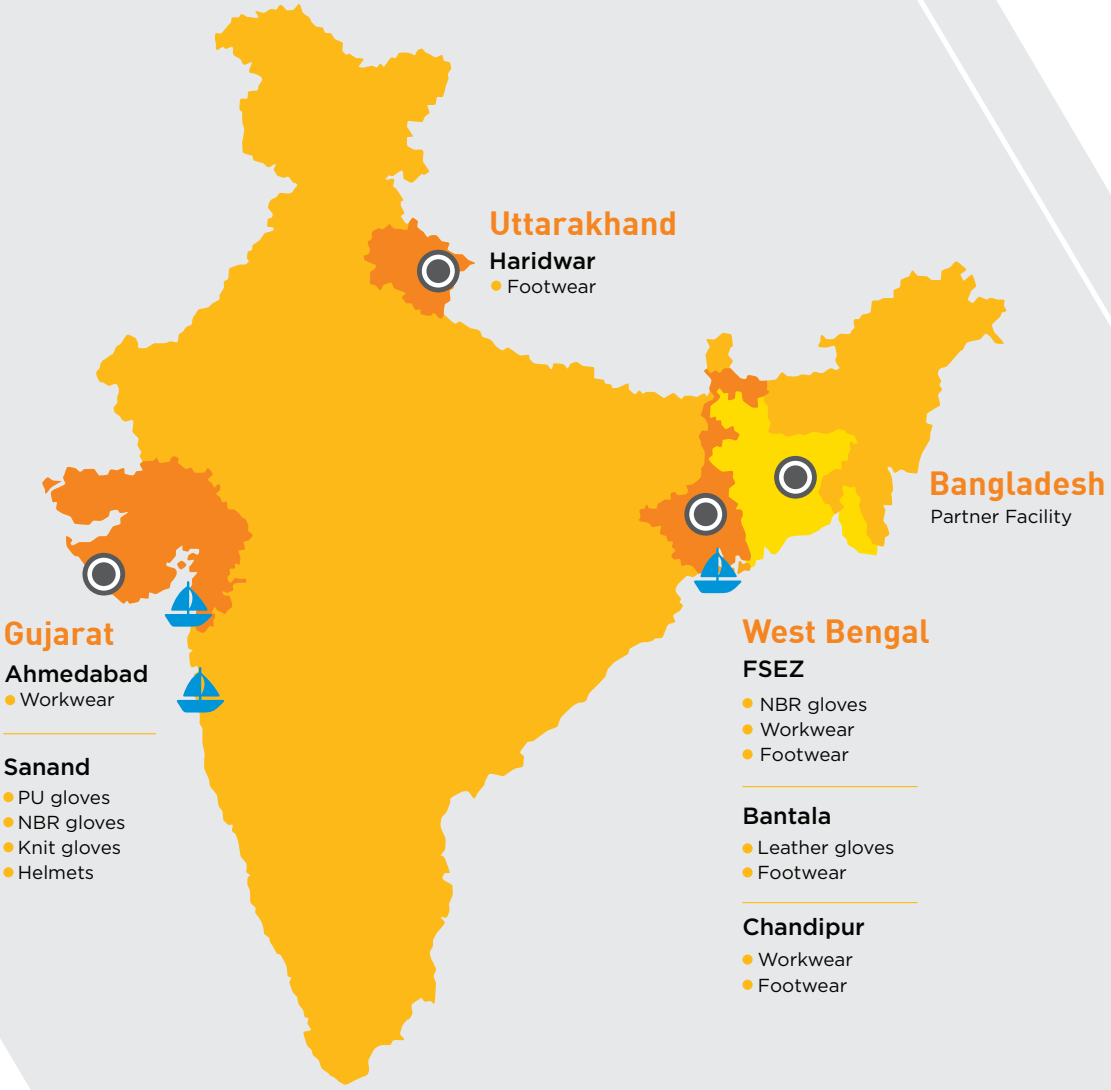


50+
Countries

3,500+
Workforce

80+
Distributors

We make, we move



Manufacturing units

Sea ports

Product Accreditations


mallcom

mallcom®

We excel in providing advanced protective headgear at Mallcom. Our headgear ensures safety and comfort in various industrial applications. Our products offer the ultimate PPE solution, combining cutting-edge technology with ergonomic design. Trust Mallcom for top-notch head protection and experience the perfect blend of safety and comfort. Secure your peace of mind with Mallcom's premium protective headgear.

- Safety Helmets
- Bump Caps
- Surgical Masks
- Face Masks

HEAD **PROTECTION**

SAFETY **HELMET**

DIAMOND XII

Ventilated UV-resistant HDPE shell

Textile lining with 3 bands and 8 attachment points

Sweatband & shock pad with ratchet adjustment

Short peak and rain gutter

Ventilated Slots

Ratchet

Plastic Harness

Green Orange Red Blue Yellow White Violet

IS 2925 EN 397 Size: 53-63

DIAMOND I

Non ventilated UV-resistant HDPE shell
Textile lining with 3 bands and 8 attachment points
Adjustable zip and sweat absorbent sweatband

IS 2925 EN 397 Size: 53-63

DIAMOND II

Non ventilated UV-resistant HDPE shell
Plastic lining with 3 bands and 8 attachment points
Adjustable zip and sweat absorbent sweatband

IS 2925 EN 397 Size: 53-63

DIAMOND III

Non ventilated UV-resistant HDPE shell
Textile lining with 3 bands and 8 attachment points
Adjustable ratchet and sweat absorbent sweatband

IS 2925 EN 397 Size: 53-63

DIAMOND XIII

Non ventilated UV-resistant HDPE shell
Plastic lining with 3 bands and 8 attachment points
Adjustable ratchet and sweat absorbent sweatband

IS 2925 EN 397 Size: 53-63

SAFETY **HELMET**

OPAL XII

Ventilated UV-resistant PP shell

Textile lining with two bands and four attachment points

Equipped with a sweatband and adjustable zip

Ventilated Slots

Nape Adjuster

Chin Strap

Green Orange Red Blue Yellow White Violet

IS 2925 Size: 52-60

OPAL X

Ventilated UV-resistant PP shell
Plastic lining with two bands and four attachment points
Equipped with a sweatband and adjustable zip

IS 2925 Size: 52-60

OPAL XI

Ventilated UV-resistant PP shell
Plastic lining with two bands and four attachment points
Equipped with a sweatband and adjustable ratchet

IS 2925 Size: 52-60

OPAL I

Non ventilated polypropylene (PP) shell
Plastic harness lining with 2 bands and 4 attachment points
Head measurement adjustable with zip fastener & long peak

IS 2925 Size: 52-60

OPAL XIII

Ventilated UV-resistant PP shell
Textile lining with two bands and four attachment points
Equipped with a sweatband and adjustable ratchet

IS 2925 Size: 52-60

BUMP **CAP**

ZIRCON

ABS shell bump cap with velcro fastening
Orange poly-cotton fabric with mesh
5cm peak with reflective tape
Adjustable detachable chin strap

Reflective Tapes

Mesh for ventilation

Velcro closure

CE
EN 812

ECO

Lightweight baseball-style bump cap
Poly-cotton shell with air-mesh
EVA padded and adjustable velcro

CE EN 812

WINTER

Impact-resistant baseball-style bump cap with HDPE shell
Poly-cotton outer featuring an extended ear guard
EVA padding and adjustable velcro closure

CE EN 812

SAPPHIRE SP B

Lightweight impact-resistant baseball type cap
EVA reinforcement with cotton and mesh polyester
Sturdy poly-cotton outer shell
Adjustable single size by velcro band

CE EN 812

AMBER

Lightweight PP shell with hi-vis poly-cotton outer
Mesh sides and optional ventilation holes for airflow
Features reflective piping and metal buckle for size adjustment

CE EN 812

RESPIRATORY **MASK**

M1202PV

Disposable FFP2 half face mask

Ultrasonically sealed with foldable nose clip

Head loop elastic fastening system

Comes with valve

Valve

Ultrasonic Seal

Head Loop

Foldable Nose Clip

IS 9473 CE EN 149

M1202P

Disposable FFP2 half face mask
Foldable type nose clip for a better fit
Ultrasonically sealed face mask
Head loop elastic fastening system

IS 9473 EN 149

M2102P

Disposable FFP1 half face mask
Foldable type nose clip for a better fit
Ultrasonically sealed face mask
Head loop elastic fastening system

IS 9473 EN 149

M3102PV

Disposable FFP1 half face mask
Foldable type nose clip for a better fit
Ultrasonically sealed with foldable nose clip
Head loop elastic fastening system
Exhalation valve is available

IS 9473 EN 149

M2202PV

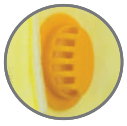
Disposable grey FFP2 half face mask
Foldable type nose clip for a better fit
Ultrasonically sealed face mask with ventilation
Head loop elastic fastening system

IS 9473 EN 149

SAFETY **HALF MASK**

L3302PV

Aesthetically designed foldable FFP3 face mask
Particulate matter filtering half mask with valve
Concealed nose clip and ultrasonically sealed
Head loop elastic fastening system



Valve

Ultrasonic Seal

Loop Adjuster

Head Loop

IS 9473 CE EN 149

L1203P

Aesthetically designed foldable FFP2 face mask
Particulate matter filtering half mask without valve
Concealed nose clip and ear loop fastening
Ear loop elastic fastening system

IS 9473 EN 149

L2302P

Aesthetically designed foldable FFP3 face mask
Particulate matter filtering half mask without valve
Concealed nose clip and ultrasonically sealed
Head loop elastic fastening system

IS 9473 EN 149

L1203PV

Aesthetically designed foldable FFP2 face mask
Particulate matter filtering half mask with valve
Concealed nose clip and ultrasonically sealed
Ear loop elastic fastening system

IS 9473 EN 149

L2103PV

Aesthetically designed foldable FFP1 face mask
Particulate matter filtering half mask with valve
Concealed nose clip and ultrasonically sealed
Ear loop elastic fastening system

IS 9473 EN 149

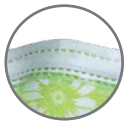
SURGICAL **MASK**

LK86L3

Printed design pleated disposable three layer hygiene mask

Concealed nose clip offers snuggly fitting

Ultrasonic selling and elastic ear loops



Concealed Nose clip

Ear Loop

Printed Design

Pleated

IS 16289 EN 14683

CK86P3

Pleated disposable 3-layered surgical mask
Concealed nose clip offers snuggly fitting
Ultrasonic sealing and elastic ear loops

IS 16289 EN 14683

CM86P3

Pleated disposable 3-layered surgical mask
Concealed nose clip offers snuggly fitting
Ultrasonic sealing and elastic ear loops

IS 16289 EN 14683

KL86P3

Pleated disposable 3-layer hygiene mask
Concealed nose clip offers snuggly fitting
Ultrasonic sealing and elastic ear hooks

IS 16289 EN 14683

NK86L3

Pleated disposable 3-layer hygiene mask
Concealed nose clip offers snuggly fitting
Ultrasonic sealing and elastic ear hooks

IS 16289 EN 14683

Mallcom has gained unparalleled expertise in the production of hand gear suitable for various applications, from driving to welding applications, to cut resistance. A wide range of hand protection gears lie in the repertoire of Mallcom, including leather gloves, string knit gloves, and nitrile supported gloves - both cut-n-stitch and seamless.

HAND **PROTECTION**

CUT & **SEWN NBR**

T8CB

Full-dipped heavy NBR gloves for mechanical & chemical risks

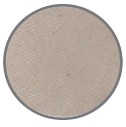
300 GSM cotton fleece lining for comfort and warmth

Safety cuff for wrist protection

Resistant to oils, abrasion, and selected chemicals

Binding Tape

Chemical Resistant Coating



Safety Cuff

ANSI ISEA-105 A2 5 1

EN 388 4221B

EN 374-1/ Type B KOT

EN 407 X1XXXX

0598 CE

7-11

DFRB

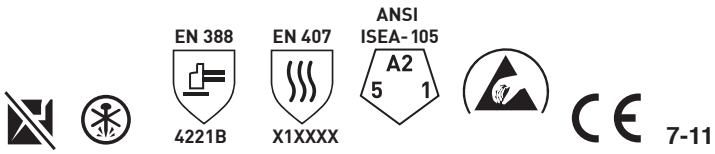
High performance cut and sewn nitrile gloves
Cut-resistant fibreglass blended para-aramid liner
Cotton interlock shell for flexibility
Rexin cuff is available

TFCB

Heavy-duty full blue nitrile-coated gloves
Soft cotton jersey fabric lining for comfort
Cut-and-sewn construction ensures durability
Safety cuff provides added wrist protection

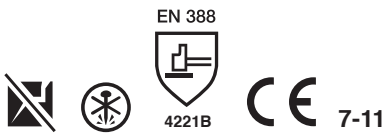
T9CB

Full NBR-coated glove with safety cuff and ESD protection
300 GSM cotton fleece lining for comfort and absorption
Conductive NBR blend ensures reliable electrostatic control
Strong resistance to oils, grease, and abrasion



TFKB

Heavy coated cut and stitch nitrile gloves
Full dipped gloves for enhanced protection
100% cotton fleece lining
Knitted wrist is available



CUT & **SEWN NBR**

T7CB

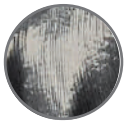
Full-dipped heavy-duty nitrile gloves with safety cuff for secure fit

300 GSM cotton fleece lining ensures comfort and moisture absorption

Durable construction for resistance to oils and abrasion

Ideal for industrial and heavy-duty applications

Full Dip



Heavy Coating

Chemical Resistant Coating

EN 388	EN 374-1/ Type B	EN 407	CE
4221B	KOT	x1xxxx	7-11

TMFCB

Impact and cut resistant NBR coated glove
Cotton interlock cut and sewn liner
Flexible m-Karpals Protect® patch back
Blue full medium coated with safety cuff

EN 388 4121X CE 7-11

TPCB R1

Heavy palm blue nitrile-coated gloves for superior grip and protection
Cotton jersey fabric lining with micro-rough finish for comfort
Cut-and-sewn construction ensures durability
Safety cuff provides secure wrist coverage

EN 388 4121X CE 7-11

TRCB

Heavy coated on terry towel lining
Full nitrile coating with safety cuff
300 GSM cotton lining for comfort
Resistant to oil, grease, and abrasion

EN 388 4331X CE 7-11

HFCB

High cut-resistant full coated nitrile glove
150 GSM cotton interlock shell
HPPE and fiberglass blended lining
Blue smooth finish with heavy dipped protection

EN 388 4377C CE 7-11

CUT & **SEWN NBR**

M8CB

Full-length NBR coated cut and stitch gloves
240 GSM cotton interlock lining
Medium dipped gloves
Safety cuff design wrist protection

Wrist Dip

Smooth Coat

Safety Cuff

EN 388 4221B
EN 374-1/ Type B KOT
EN 407 x1xxxx
CE 7-11

M7CB

Chemical resistant Full-length NBR coated cut and stitch gloves
240 GSM cotton interlock lining
Medium dipped gloves
Safety cuff design wrist protection

EN 388 4121X
EN 374-1/ Type B KOT
0598
7-11

MPKB

Medium coated cut and stitch nitrile gloves
Palm dipping ensures flexibility
100% cotton interlock lining
Knitted wrist is available

EN 388 4121X
7-11

MFCB

Medium coated cut and stitch nitrile gloves
Full dipped gloves for enhanced protection
100% cotton interlock lining
Safety cuff is available

EN 388 4121X
7-11

MFKB

Medium coated cut and stitch nitrile gloves
Full dipped gloves for enhanced protection
100% cotton interlocklining
Knitted wrist is available

EN 388 4121X
7-11

CUT & SEWN NBR

SFKB

Eco-range light full blue nitrile-coated gloves
Soft cotton fleecy lining ensures comfort
Cut-and-sewn construction for durability
Knitted wrist provides secure, snug fit

EN 388 4121X 7-11

SFCB

Eco-range light full blue nitrile-coated gloves
Soft cotton fleecy fabric lining for comfort
Cut-and-sewn construction ensures durability
Safety cuff provides secure wrist protection

EN 388 4121X 7-11

GPKY

Eco range palm coated nitrile protective glove
150 GSM cotton interlock liner for comfort
Light yellow smooth finish for oil and abrasion resistance
Knitted wrist for secure fit and ease of wear

EN 388 3111X 7-11

GPLY

Eco range palm coated nitrile protective glove
150 GSM cotton interlock liner for comfort
Light yellow smooth finish resists oil and abrasion resistance
Yellow knitted wrist for secure fit and comfort

EN 388 3111X 7-11

LPKY

Lite dipped cut and stitch nitrile gloves
Palm dipping ensures flexibility
100% cotton interlock lining
Knitted wrist is available

EN 388
4111X
7-11

LFKY

Lite dipped cut and stitch nitrile gloves
Full dipped gloves for enhanced protection
100% cotton interlock lining
Knitted wrist is available

EN 388
4121X
7-11

LFKO

Full coated light dipped nitrile protective glove
240 GSM cotton interlock liner for comfort
Light orange smooth finish for oil and abrasion resistance
Knitted wrist for secure fit and ease of wear

EN 388
4121X
7-11

LPKB

Lite dipped cut and stitch nitrile gloves
Palm dipping ensures flexibility
100% cotton interlock lining
Knitted wrist is available

EN 388
4111X
7-11

CUT & **SEWN NBR GAUNTLET**

DFJB

High cut-resistant nitrile 40 cm gauntlet
Cotton interlock outer shell
Cut resistant glass and para-aramid inner shell
Blue coloured full dip NBR coating

Blue NBR Full Coating

Cotton Interlock Shell Lining

Gauntlet Style Gloves

EN 388	EN 374-1/ Type B	EN 407	ANSI ISEA-105
4532D	KPT	x2xxxx	A4 5 2

CUT D

0598 CE 9-11

NIF LITE IL 40

40 cm gauntlet style nitrile gloves
Yellow coloured light NBR full coating
300 GSM cotton interlock lining
Ideal for chemical handling

EN 388 4221B | EN 374-1/ Type B KOT | EN 407 x1xxxx | 0598 CE | 9-11

Techo FL 30

30 cm gauntlet style nitrile gloves
Blue coloured heavy NBR full coating
300 GSM cotton fleece lining
Ideal for chemical handling

EN 388 4221B | EN 407 x1xxxx | 0598 CE | 9-11

Techo FL 40

Standard 40 cm nitrile gauntlet
Soft and comfortable cotton fleece
Durable blue NBR coating
Good for chemical resistance

EN 388 4221B | EN 407 x1xxxx | 0598 CE | 9-11

SEAMLESS **NBR**

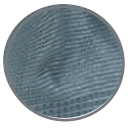
P25NGA

Grey NBR palm-coated gloves

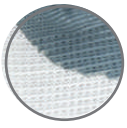
15G white polyester seamless liner

Smooth palm coating enhances grip and dexterity

Lightweight design suitable for extended use



Smooth NBR Coating



Polyester liner

Coloured Overlock

EN 388

4121X

CE

7-11

P35NBA

Black NBR palm-coated gloves
15G grey polyester seamless liner ensures comfort and flexibility
Smooth palm coating enhances grip and dexterity
Lightweight design suitable for extended wear

EN 388 4121X CE 7-11

N33VBA

Black NBR palm-coated gloves
13G grey polyester seamless liner
PVC dots on the palm enhance grip and control
Lightweight design ideal for extended use

EN 388 4121X CE 7-11

P3RNBA

Black palm-coated NBR gloves
15G grey recycled polyester seamless liner
Smooth palm coating enhances grip and dexterity
Lightweight design suitable for prolonged use

EN 388 4121X Global Recycled Standard

P5RNGA

Grey palm-coated NBR gloves
15G black recycled polyester seamless liner
Smooth palm coating provides enhanced grip and dexterity
Lightweight design suitable for extended wear

EN 388 4121X Global Recycled Standard

SEAMLESS **NBR**

NS5RHT

Dual coated crotch reinforced seamless nitrile gloves

15G blue nylon liner

Black sandy palm coating over full smooth blue coating

Chemical resistant gloves

Sandy NBR Coating

Nylon Knitted Blue Liner

Crotch Reinforcement

EN 388 4121X EN 374-1 CE 7-11

PS5NPT

Dual coated seamless nitrile gloves
15G blue polyester liner
Black sandy palm coating over full smooth green coating
Chemical resistant gloves

EN 388 4121X EN 374-1 CE 7-11

P35NHK

Dual-coated seamless nitrile gloves
15G grey polyester seamless liner
Black palm sandy coating over 3/4th blue smooth coating
Durable design suitable for industrial and heavy-duty tasks

EN 388 4121X CE 7-11

P85NAG

Blue palm-coated NBR gloves
15G polyester seamless liner
Palm coating with sandy finish
Lightweight design for extended use

EN 388 4121X CE 7-11

P65NAG

Blue NBR palm-coated gloves
15G hi-vis polyester seamless liner
Palm coating with sandy finish
Lightweight design for extended use

EN 388 4121X CE 7-11

SEAMLESS **NBR**

N33VDK

Grey 13G nylon seamless liner with dual NBR coating

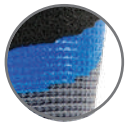
Black sandy palm coating over 314 blue smooth finish

PVC dotted palm for enhanced grip

Durable design for better abrasion and mechanical protection

PVC Palm Dotted

Nylon Seamless Liner



Blue Dual Coated NBR

EN 388
4121X
CE
7-11

P35NBG

Black NBR palm-coated gloves for reliable hand protection
15G grey polyester seamless liner
Sandy palm coating enhances grip and control
Lightweight for extended use

EN 388 4121X CE 7-11

P35NBD

Black NBR palm-coated gloves
15G polyester seamless liner
Foam palm coating
Lightweight for extended use

EN 388 4121X CE 7-11

P55NBC

Black NBR full-coated gloves
15G polyester seamless liner
Full coating with smooth finish
Lightweight for extended use

EN 388 4121X CE 7-11

F65NBG

High cut-resistant NBR coated HPPE gloves
15G seamless knitting
Liner blended with HPPE and fibreglass
Palm coated sandy finish

EN 388 4342B CE 7-11

SEAMLESS **NBR**

N65NED

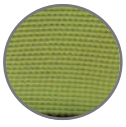
Hi-vis NBR palm-coated gloves

Hi-vis yellow 15G nylon seamless liner

Hi-vis yellow NBR palm coating with foam finish

Lightweight for extended use

Hi-vis Coating



Elastisized Rib

Coloured Overlock

EN 388
4121X
CE
7-11

N65EED

Hi-vis NBR palm-coated gloves with crotch reinforcement
Hi-vis yellow 15G seamless nylon liner
Hi-vis yellow NBR coating with foam finish
Lightweight for extended use

EN 388 4121X CE 7-11

PJ4NBC

Blue anti-slip gloves
13G polyester with rib lining
Full black NBR coating with smooth finish
Lightweight for extended use

EN 388 4121X CE 7-11

P94NBB

Red anti-slip gloves
13G red polyester with rib lining
3/4th black NBR coating with smooth finish
Stretchable material comfort

EN 388 4121X CE 7-11

M35NBD

Black NBR palm-coated gloves for reliable hand protection
15G nylon-spandex blended liner ensures comfort and flexibility
Palm coating sandy finish
Lightweight for extended use

EN 388 4131X CE 7-11

PERFORMANCE **SEAMLESS NBR**

R35NBG

Black NBR palm coated gloves

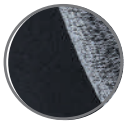
15G seamless gloves made from HPPE & graphene

Sandy palm nitrile coating provides mechanical protection

Graphene enhances strength, durability, and heat dissipation

Cut Resistant

Highly Dextrous

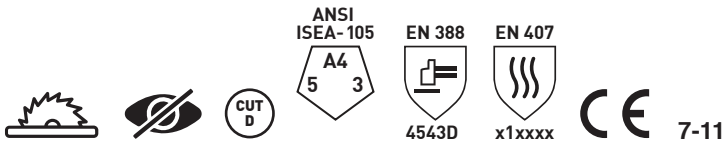


Graphene Blended Liner

ANSI ISEA-105 A4 5 3 | EN 388 4543D | EN 407 x1xxxx | CUT D | CE 7-11

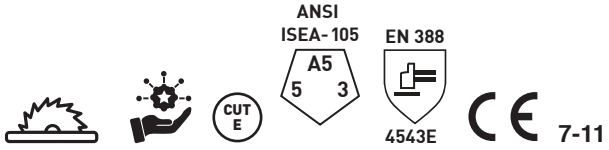
H63NBG

Cut-resistant NBR-coated gloves
13G HPPE and fiberglass blended hi-vis liner
Black palm sandy finish over hi-vis shell enhances grip
Lightweight for extended use



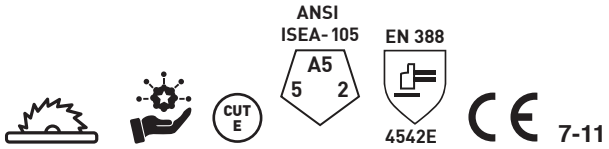
E35NBG

Cut-resistant NBR-coated gloves
15G HPPE and filament steel blended liner
Black palm sandy coating on grey shell enhances grip
Lightweight for extended use



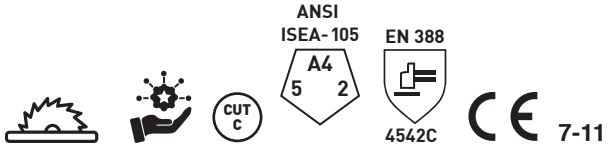
E43NBG

Cut-resistant NBR-coated gloves
13G HPPE and steel blended liner
Black palm sandy finish over royal blue shell enhances grip
Lightweight for extended use



H33NMK

Cut-resistant NBR-coated gloves
13G HPPE and fiberglass blended grey liner
Black palm sandy coating over 3/4 red smooth surface enhances grip
Lightweight for extended use



PERFORMANCE **SEAMLESS NBR**

J33NBG

13G HPPE and basalt yarn for cut and abrasion resistance

Sandy NBR coated palm for grip, puncture, and oil protection

Level D cut protection for sharp tools

Basalt yarn adds durability, and skin safety

Cut Resistant

Comfort Finish

Basalt Liner

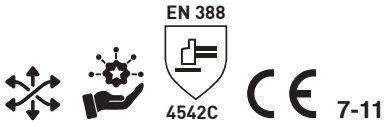
ANSI ISEA-105 A4 5 2 | EN 388 4542D | EN 407 x1xxxx | CUT D | CE 7-11

K63NBG

13G para-aramid liner high performance liner
Sandy nitrile coat palm gives strong multi-surface grip
Knitted cuff ensures snug, secure fit
Durable design for heavy-duty tasks

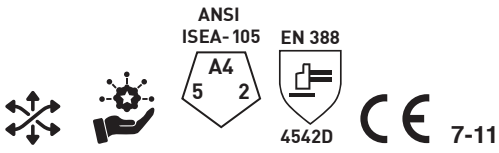
L83NBG

13G HPPE, fibre glass blended liner
Cut and mechanical resistant gloves
Black palm coated NBA finish
Tear resistant durable gloves



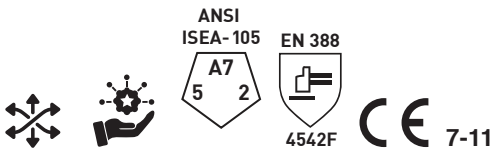
T35NBG

15G highcut resistant nitrile gloves
Fiberglass and filament steel blended HPPE liner
Palm coated black sandy finish
Polypropylne overlock binding



U35NBG

15G tungsten, steel & HPPE liner
Sandy nitrile grip on palm
Tungsten filament adds extreme cut strength
TDM cut level for high-risk applications



PERFORMANCE **SEAMLESS NBR**

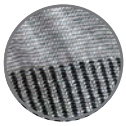
E38NBG

18G steel filament HPPE liner

Nitrile palm coating

Ultra-thin build ensures high dexterity

Excellent tear resistance lasting protection



Elasticised Rib

Sandy Coating

Coloured Overlock

18G

ANSI ISEA-105 A6 5 2

EN 388 4542D

CE 7-11

U83NBG

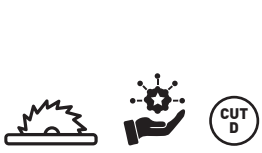
13G HPPE & tungsten liner for high cut protection
Sandy nitrile palm ensure better grip
Flexible polyester–spandex blend adds comfort & fit
TDM cut F for extreme hazard protection

Z38NBG

High cut-resistant seamless nitrile gloves
Knitted liner 18G
HPPE and nickel filament blended liner
Palm coated sandy finish

B33NGD

13G Dyneema® & steel liner for cut protection
Foamy nitrile palm & tips gives secure grip
Seamless, light build for comfort & dexterity



B37NBG

13G bio-based Dyneema® liner for cut protection
Sandy nitrile palm provide strong grip
Seamless, lightweight design ensures comfort & dexterity
Protects against mechanical hazards

PERFORMANCE **SEAMLESS NBR**

VR3RBG

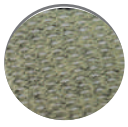
13G para aramid modacrylic blended gloves

Sandy nitrile coating on palm & fingertips for grip

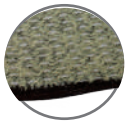
Neoprene & NBR blended coating

Arc flash resistant gloves

Neoprene Blend



Modacrylic Blend



Cut Resistant

CAT 2
ATPV 10cal/cm²

CUT D

ANSI ISEA-105 A4 5 2

EN 388 4542D

EN 407 x1xxxx

CE 7-11

E43KDL

13G HPPE, steel & fiberglass liner for cut protection
Sandy nitrile coating on palm for grip
Flexible Philippinensis impact padding pasted on back
TDM D cut for heavy-duty applications

ANSI ISEA-105 A4 5 2 | EN 388 4542DP | ANSI / ISEA 138 2 | CE 7-11

E43FTL

13G seamless NBR gloves with impact resistance
Flexible Philippinensis impact guard stitched on the back
TDM cut D liner crafted from steel filament & HPPE blend
Black sandy palm coating over a vibrant blue liner

ANSI ISEA-105 A4 5 2 | EN 388 4542DP | ANSI / ISEA 138 2 | CE 7-11

E33JDL

Impact resistant 13G seamless NBR gloves
Flexible DIBRU impact padding with velcro closure
HPPE & steel filament blended liner
Sandy finish black NBR palm coating

ANSI ISEA-105 A4 5 2 | EN 388 4542DP | ANSI / ISEA 138 2 | CE 7-11

H63TDL

Impact resistant 13G high cut NBR gloves
HPPE & glass fiber blended liner
Flexible m-KARPALS PROTECT padding on back
Sandy black NBR palm coating

ANSI ISEA-105 A4 5 2 | EN 388 4542DP | ANSI / ISEA 138 1 | CE 7-11

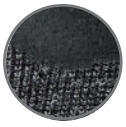
WINTER **SEAMLESS NBR**

WT5NBG

Hi performance 15G seamless nitrile gloves
Filament steel, fibreglass and HPPE blended liner
Acrylic fleece lining for thermal insulation
Palm coated sandy finishing

Thermal Insulation

Acrylic Lining



Heat Resistant

CUT D

EN 511
x2x

ANSI ISEA-105
A4
5 2

EN 388
4542D

EN 407
x3xxxx

CE 7-11

W63NBH

15G seamless nitrile gloves
Hi vis yellow polyester shell
Acrylic fleece lining for thermal insulation
3/4th coated black sandy finishing

EN 511 x2x | EN 388 4242X | EN 407 x2xxxx | CE 7-11

W43NBG

15G seamless nitrile gloves
Royal blue polyester shell
Acrylic fleece lining for thermal insulation
Palm coated black sandy finishing

EN 511 x2x | EN 388 4242X | EN 407 x2xxxx | CE 7-11

E32NBG

21G seamless high cut resistant NBR gloves
HPPE & tungsten blended liner
Sandy finish black NBR palm coating

21G | CUT E | ANSI ISEA-105 A5 5 2 | EN 388 4542E | CE 7-11

U42NBG

21G seamless high cut resistant NBR gloves
HPPE & tungsten blended liner
Sandy finish black NBR palm coating

21G | CUT F | ANSI ISEA-105 A6 5 2 | EN 388 4542F | CE 7-11

SEAMLESS **PU**

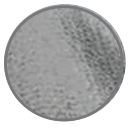
P363G

Grey melange colour 13G cut resistant PU glove

HPPE yarn blended with polyster and glass fibre

Grey PU coating on palm

High abrasion cut-resistance



DMF Free

Thin PU Coat

Overlock Binding

ANSI ISEA-105 A3 5 2

EN 388 4542C

CE 7-11

P353G

Grey melange colour 13G cut resistant PU glove
HPPE yarn blended with polyster and steel filament
Grey PU coating on palm
High abrasion cut-resistance

ANSI ISEA-105 A4 5 3
EN 388 4542D
CE 7-11

P513B

Black polyester 13G PU coated glove
Black PU coating on the palm
Standard economical glove for general application

EN 388 4131X
CE 7-11

P313G

Grey polyester 13G PU coated glove
Grey PU coating on the palm
Ideal for general applications

EN 388 4131X
CE 7-11

P213W

White polyester 13G PU coated glove
White PU coating on the palm
Standard economical glove for general application

EN 388 4131X
CE 7-11

PARA **ARAMID**

KW4377B

Heat and flame resistant welder glove
480GSM woven para-aramid construction
15cm para-aramid cuff
Non oven fabric lined palm, cotton fleece lining in back
Canvas fabric lining also available in cuff

KD4377B

Woven Para Aramid

Cotton Fleece Lining

Synthetic Binding

ANSI ISEA-105 A3 2 4

EN 388 2444C

EN 407 423XXX

CE 9-11

KP07

100% para-aramid seamless glove
Elasticised para-aramid pile wrist
Terry towel finish

EN 388:2016 + A1:2018
234XX CE 7-11

K007D/K010D

Heat resistant para-aramid dotted glove
7G and 10G 100% para-aramid seamless shell
PVC dots are available on plam sight

EN 388:2016 + A1:2018
134XX CE 7-11

KCL

Heat resistant para-aramid glove
7G 100% para-aramid seamless shell
100% cotton liner with coloured overlock

EN 388 234XX EN 407 423XXX CE 9-11

KARMSLV

100% para-aramid yarn knitted arm sleeves
Thumb hole is available for user convenience
36 cm long sleeve
Exceptional cut resistant performances

EN 388 2334C EN 407 X2XXXX CE

ARM **SLEEVE**

GUARDEX

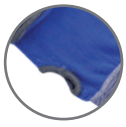
Seamless high cut-resistant arm sleeves made

15-gauge sleeve

Thumb hole and spandex–nylon rib

Adjustable Velcro strap and reinforced binding

HCPE, nylon and tungsten blend



Thumb Hole

Velcro Strap

Stretch Rib

ANSI ISEA-105 A6 2 X

EN 388 254XF

CE

ARMOREX

13G knitted high cut resistant armsleeve
Liner is made of blended HPPE and fibreglass blended yarn
Velcro adjusted upper arm fastening with knitted wrist

EN 388
254XC

CUTXTREME

13G HCPE, polyester and spandex blend armsleeve
Provides high cut-resistance and excellent durability.
Thumb hole and nylon–spandex rib ensure a snug fit

EN 388
2X4XC

CARMSLV

100% cotton armsleeve
10G knitted liner
Thumb hole is available for user convenience

EN 388
2X2XX

PARMSLV

100% Polyester knitted armsleeve
13G knit with open elbow
Knitted rib for snuggly fitting

EN 388
2X2XX

STRING KNIT

NW1082D

7G seamless knit wool and nylon blend gloves
PVC dots on the palm provide enhanced grip
Soft, warm, and comfortable for cold weather use
Durable construction for long-lasting performance

EN 388
213XX

P1308DD

13G PVC dotted ambidextrous gloves
PVC dots are available on both sides
Seamless polyester knitted gloves

EN 388
213XX

P151A

Polyester knitted 15G seamless gloves
White lint free gloves for electronics industry
Anti-static finger tips
High dexterity for precision job

P153S

Seamless knitted antislip gloves
15G polyester knitted grey liner
Ribbed finish for anti slip properties

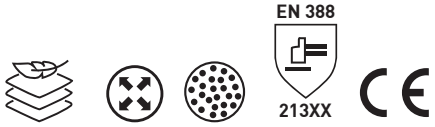
EN 388:2016 +
A1:2018
101XX

PW0705D

7G seamless ragg wool and polyester blend gloves
PVC dots on the palm for superior grip
Soft and warm, ideal for cold weather use
Durable and comfortable for extended wear

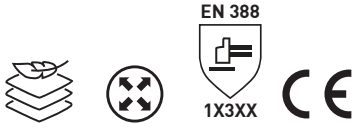
C0705D

7G seamless cotton knitted gloves
PVC dotted palm to enhance grip
Elasticised rib for snuggly fit
Sky blue dotting over off-white lining



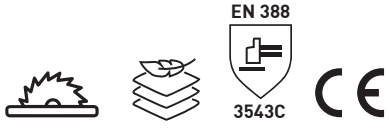
AC1072

7G seamless acrylic and elastane blend gloves
Soft, stretchy, and comfortable for everyday use
Provides warmth while maintaining flexibility
Durable construction suitable for extended wear



HL010

High cut-resistant seamless gloves
Split leather palm reinforcement
HPPE & fibreglass blended lining
Elasticised rib for snuggly fitting



MULTI UTILITY

MACH 32

Fingerless multi-utility mechanical gloves
Flexible impact-resistant fingers and knuckles
Honeycomb-shaped reinforcement for slip resistance
Foam padding for slip and vibration resistance
Poly-spandex foam laminated back
Custom velcro-adjusted cuff with pull tab

EN 388
2121X
CE

MACH 31

Fingerless multi utility mechanical gloves
Sweat absorbent fabric on thumb
Honeycomb shaped reinforcement for slip resistance
Foam padding for slip and vibration resistance
Poly-spandex foam laminated back
Custom velcro adjusted cuff with pull tab

EN 388
2121X
CE

MACH 21

Multi utility mechanical gloves
Artificial leather palm with crotch reinforcement
Honeycomb shaped reinforcement for slip resistance
Foam padding for slip and vibration resistance
Stretchable fabric and elasticized wrist for dexterity

EN 388
2121X
CE

MACH 12

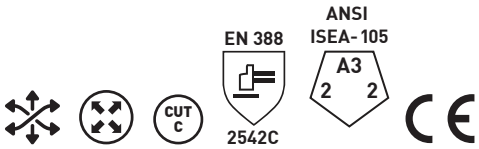
Multi utility mechanical gloves
Honeycomb shaped reinforcement for slip resistance
Foam padding for vibration resistance
Retro reflective fingertip and hi-vis finger crotch and back
Stretchable fabric and elasticized wrist

EN 388
2121X
CE

MACH 11

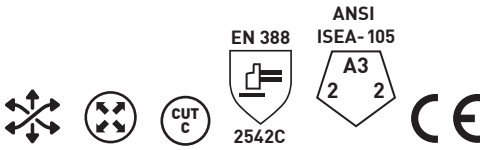
MACH 42

All-in-one mechanical gloves
Glass and para aramid blended cut resistant 360 liner
Honeycomb shaped reinforcement for slip resistance
Foam padding for slip and vibration resistance
Retro reflective fingertip and hi-vis finger crotch and back
Stretchable fabric and elasticised wrist for dexterity



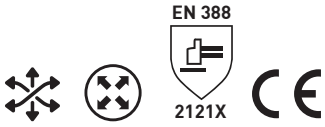
MACH 43

All-in-one mechanical gloves
Glass and para aramid blended cut resistant palm liner
Honeycomb shaped reinforcement for slip resistance
Foam padding for slip and vibration resistance
Retro reflective fingertip and hi-vis finger crotch and back
Stretchable fabric and elasticised wrist for dexterity
Flexible impact resistant fingers and knuckles



MACH 25

Three fingerless Brown goat leather reverse gloves
Quick-dry, water-resistant, nuckle padding design
Constructed with terry cloth, spandex with durable stitching
Adjustable Velcro strap
Non slip layer silicone palm



MACH 57

Needle, puncture, and cut-resistant touchscreen mechanical gloves
Palm suede with silicone print for superior grip
Constructed with terry cloth, PU emboss & neoprene, cut liner (AK65)
Velcro strap with brand loop for secure fit

LEATHER IMPACT **RESISTANT**

BE2857

Dyed brown grain leather lined driver gloves

Steel & paraaramid lining for superior cut protection

ANSI A7 high cut resistance

Wolly-style impact padding, flexible and safe

Wing thumbed and elasticised back

Impact Coverage

Goat Grain

Synthetic Binding

ANSI ISEA-105 A6 3 3

CUT F

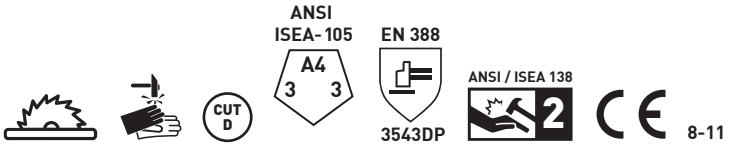
EN 388 3543FP

ANSI / ISEA 138 2

CE 8-11

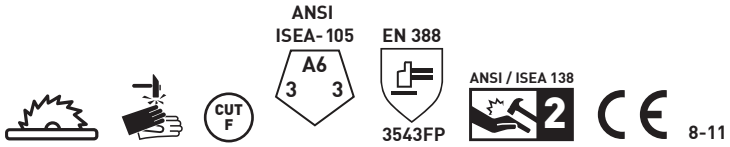
BE2357

Dyed yellow grain leather lined driver gloves
Fiberglass& paraaramid lining for superior cut protection
ANSI A4 high cut resistance.
Wolly-style impact padding, flexible and safe
Wing thumbed and elasticised back



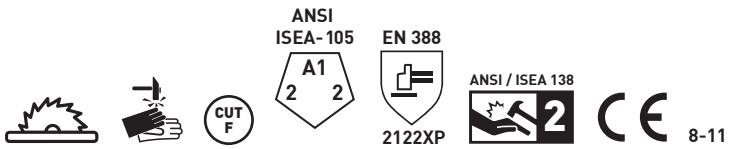
BE2257

Natural grain leather lined driver gloves
Steel & aramid lining for superior cut protection
ANSI A6 high cut resistance.
Wooly-style impact padding, flexible and safe
Wing thumbed and elasticised back



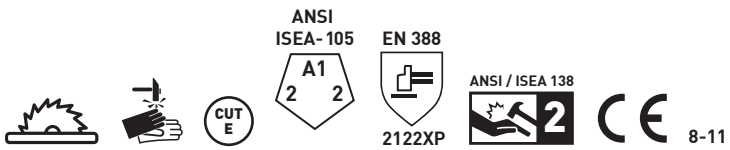
BE2202

Natural grain leather unlined driver gloves
Philipinensis-style impact padding, flexible and safe
Wing thumbed and elasticised back



BE2208

Natural grain unlined driver gloves
Dibru style impact padding for flexability and safety
Wingthumb and elastised back



LEATHER **PERFORMANCE**

ME2819

Beige grained leather lined driver gloves

Aramid viscose bleanded neoprene contant and para aramid cought D liner

ARC rated and heat resistant

Self-hem binding for durable finish

Wing thumbed and elasticised back

4 tips

Cow Grain Leather

Self Hem

CUT E

CAT 4
ATPV 63cal/cm²

ANSI ISEA-105 A5 3 4

EN 407
423X4X

EN 388
3543EP

CE 8-11

ME2871

Arc flash resistant grain lined driver gloves
Heat resistant modacrylic blended lining
Keystone thumb and elasticised back
Synthetic coloured binded cuff

CAT 4
ATPV 63cal/cm²
EN 388
3332B
8-11

BE22J1

High performance natural grain lined driver gloves
Filament steel blended para-aramid lining
Elasticised back and wing thumb
Synthetic colour binding tape

ANSI
ISEA-105
A6
3 4
CUT F
EN 388
3544F
EN 407
X2XXXX
8-11

BE2291

High cut resistant natural grain lined driver glove
Fibre glass blended HPPE knitted lining
Synthetic coloured binded tape with elasticised back

ANSI
ISEA-105
A4
5 3
CUT D
EN 388
3544D
8-11

BE2251

Cut resistant natural grain lined driver glove
Steel filament blended para aramid lining
Elasticised back and coloured binding tape stitched

ANSI
ISEA-105
A5
3 4
CUT E
EN 388
3544E
EN 407
X2XXXX
8-11

LEATHER WINTER

E355

Yellow cow grain leather winter gloves
13G seamless acrylic knitted lining inside
Self-ring hem for secure finish
Durable design for lasting protection

ANSI ISEA-105 A1 2 2 | EN 388 2122X | EN 511 x2x | CE 8-11

E324

Yellow grain insulated driver gloves
Synthetic fur lining and winged thumb
Elasticised back with coloured binding tape

ANSI ISEA-105 A1 2 2 | EN 388 2122X | EN 511 x2x | CE 8-11

E332

Yellow grain insulated canadian gloves
Synthetic fur lining and cotton drill back
Rubberised cuff with coloured binding tape

ANSI ISEA-105 A1 2 2 | EN 388 3132X | EN 511 x2x | CE 8-11

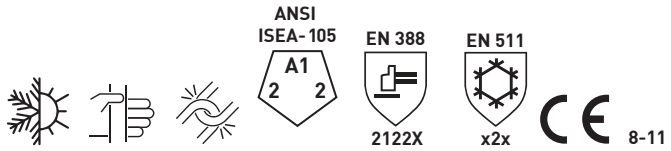
E755

Natural grain insulated canadian gloves
Both side fleecy lining and cotton drill fabric back
Knitted wrist and leatherand finger tips

ANSI ISEA-105 A1 2 2 | EN 388 3132X | EN 511 x2x | CE 8-11

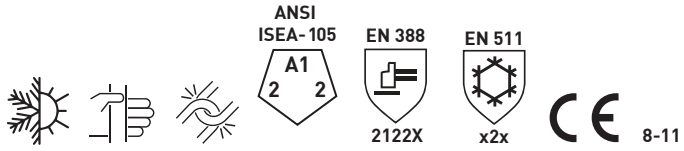
E223

Natural grain insulated driver gloves
Acrylic fleece lining and winged thumb
Elasticised back with coloured binding tape



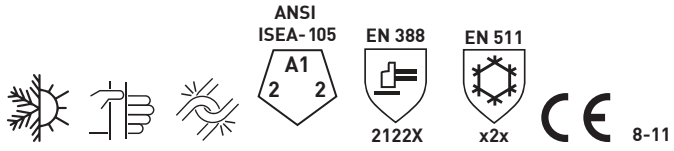
E344

Yellow cow grain leather winter gloves
Thinsulate lining for winter insulation
Driver style with secure self-ring hem
Warm, durable protection in cold conditions
Elasticised back and self bring him



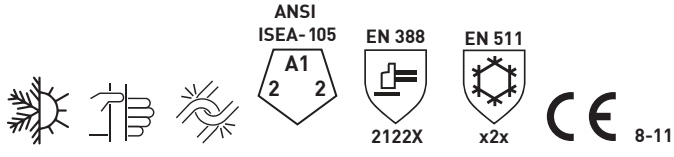
E366

Natural goat grain leather winter gloves
Acrylic brown fur lining for winter warmth
Aesthetically designed Brown Goat Leather keystone thumb
Self-ring hem for lasting durability



E256

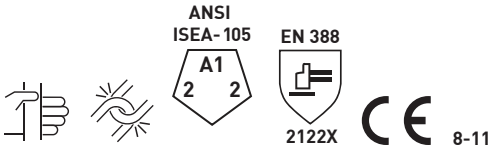
Green dyed water-repellent winter gloves
Black fleecy with Thinsulate lining for insulation
Elasticized back for snug fitting
Self-hem binding ensures lasting durability



LEATHER DRIVERS

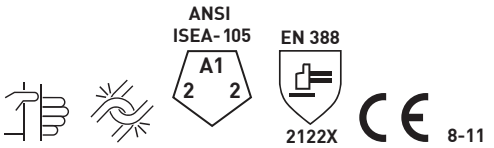
D288

Black dyed goat grain winter gloves
Black fleecy with Thinsulate lining for insulation
Velcro closing for secure fit
Piping -hem binding ensures lasting durability



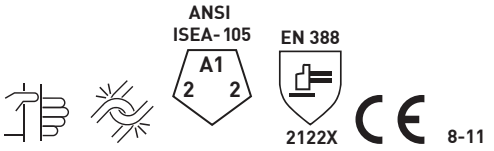
D280

Dyed black goat grain grain driver gloves
8cm wide grey rib is available
Elastized back for snug fit
Eylets are available and shaded double pump
Piping hem binding and crotch reinforced thumb



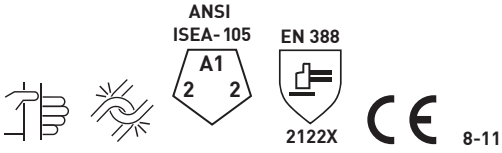
D116

Green grain water repellent grain driver gloves
Leather reinforcement on palm
Elasticized rib with leather pulse patch



D809

Dyed brown grain and split driver gloves
Keystone thumb and elasticized back
Synthetic coloured binding taped cuff



D419

Brown dyed split driver gloves.
Keystone thumb for ergonomic fit
PU microfiber padding stitched on palm and fingers
Knitted rib construction for secure fit

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

D491

Yellow cow grain lined driver gloves
Full red fleece lining and key stone thumb
Elasticized back with coloured binding tape

ANSI ISEA-105 A1 2 2 | EN 388 2122X | EN 511 X2X | CE 8-11

D910

Combined driver gloves
Beige cow grain and blue split
Keystone thumb and elasticised back
Piping hem binding ensure lasting durability

ANSI ISEA-105 A1 2 2 | EN 388 2122X | EN 511 X2X | CE 8-11

D463

4 tips beige cow grain leather driver gloves
Keystone thumb and elasticized back
Hi-Vis fabric patch on finger tip
Synthetic coloured binding

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

LEATHER **DRIVERS**

D254

Dyed brown insulated grain driver gloves
Palm reinforced with foam lining
Rib cuff ensures secure and snug fit
Crotch reinforced thumb

Reinforced Palm

Vein Protection

Knit Wrist

ANSI ISEA-105 A1 2 2

EN 388 2122X

CE 8-11

D132

Beige Reinforced water repellent grain driver gloves
Elasticized rib with leather pulse patch

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

D142

Water and oil repellent green grain driver gloves
Winged thumb and elastised back
Synthetic coloured binding taped cuff

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

D120

Water and oil repellent grain and reserved combined driver gloves
Reverse in palm and grain back
Winged thumb and elastised back
Synthetic coloured binding taped cuff

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

D810

Combined leather driver gloves
Beige grain palm and brown split leather back
Keystone thumb and elasticized back
Colored binding tape at the end of the cuff

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

LEATHER DRIVERS

D232

4 tips natural grain leather driver glove
Winged thumb and elasticized back
Synthetic coloured binding taped cuff

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

D436

4 tips beige grain leather driver gloves
Key stone thumb and adjustable leather fastner
Synthetic coloured binding tape

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

D662

Natural grain and split combined leather driver glove
Winged thumb and elasticized back
Synthetic coloured binding taped cuff

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

D762

3 tips yellow grain and split combined driver glove
Winged thumb and elasticized back
Synthetic coloured binding taped cuff

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

D591

Natural split leather driver glove
Winged thumb and elasticized back
Synthetic coloured binding tape

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

D434

Beige unlined leather driver gloves
Keystone thumb and elasticized back
Synthetic coloured binding tape

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

D333

Yellow unlined leather driver gloves
Key stone thumb and elasticized back
Self hemmed cuff

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

D204

Natural grain leather driver glove
Knitted elastic rib with leather pulse patch and winged thumb

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

LEATHER **CANADIAN**

C286

Natural grain canadian gloves

Denim back for added comfort and flexibility

12 cm rubberized denim cuff

Fleecy lining inside

Vein Protection

Reinforced Knuckles

Extended Cuff

ANSI ISEA-105 A1 3 2

EN 388 3132X

CE 8-11

C232R

Natural cow grain canadian glove
Reinforcement on palm and thumb
Striped cotton back and rubberised cuff
Fleecy lining inside

ANSI ISEA-105 A1 3 2 — EN 388 3132X — CE 8-11

C864

Reinforced natural split canadian gloves
Fleecy lining inside and cotton drill fabric back
Rubberised cuff with coloured binding tape

ANSI ISEA-105 A2 4 4 — EN 388 4244X — CE 8-11

C265

Natural grain canadian gloves
Stripped cotton drill back
7 cm rubberized cuff
Fleecy lining inside

ANSI ISEA-105 A1 3 2 — EN 388 3132X — CE 8-11

C834JNS

Natural split canadian leather gloves
Fleecy lining inside and jeans fabric back
Cenvas cuff with coloured binding tape

ANSI ISEA-105 A1 3 2 — EN 388 3132X — CE 8-11

LEATHER **CANADIAN**

C562

Natural cow grain Canadian gloves with Hi-Vis fabric back
Hi vis 7 cm Hi vis PVC cuff
Ideal for industrial, road side construction
Fleecy lining inside

Hi-vis Cuff

Reflective Tape

Leather Palm

ANSI ISEA-105 A1 3 2

EN 388 3132X

8-11

C261

Dyed FR resistance brown grain extended canadian gloves
Para aramid stitched and keystone thumbed
Para aramid lining inside
Self hem binding

ANSI ISEA-105 A1 3 2 | EN 388 3132X | EN 407 413X4X | CE 8-11

C278R

Natural cow split canadian leather gloves
Reinforcement on 5 fingers
Cotton drill back with para aramid stitches
Fleece lined palm and rubberised cuff

ANSI ISEA-105 A2 3 2 | EN 388 3242X | CE 8-11

C231

Natural grain canadian leather gloves
Fleecy lining and leather knuckle and finger tips
Canvas cuff with coloured binding tape

ANSI ISEA-105 A1 3 2 | EN 388 3132X | CE 8-11

C297

Black grain palm canadian leather gloves
Palm and knuckle reinforcement with cotton drill back
Canvas cuff with coloured binding tape

ANSI ISEA-105 A1 3 2 | EN 388 3132X | CE 8-11

LEATHER **CANADIAN**

C859

Natural split leather canadian gloves with reinforcement in palm

Blended para-aramid, non-woven lining

Drill fabric back with leather knuckle protection

Rubberized cuff ensures secure fit and wrist safety

Reinforced Index Finger

Reinforced Palm

Para aramid Liner

ANSI ISEA-105 A5 5 4

EN 388 4544E

EN 407 43XXXX

CE 8-11

C853

Reinforced split leather canadian glove
Cotton drill back and fleecy lining inside
Rubberised cuff and reinforcement over palm & index

ANSI ISEA-105 A2 4 4 | EN 388 4244X | CE 8-11

C251

Natural grain and split canadian leather gloves
Fleecy lining and cotton drill fabric back
Canvas cuff with coloured binding tape

ANSI ISEA-105 A1 3 2 | EN 388 3132X | CE 8-11

C332

Yellow grain canadian leather gloves
Fleecy lining inside and cotton drill fabric back
Rubberised cuff with coloured binding tape

ANSI ISEA-105 A1 3 2 | EN 388 3132X | CE 8-11

C542

Natural split canadian glove
Blue cotton drill back and fleecy lining
Rubberised cuff and leather knuckle protection

ANSI ISEA-105 A1 3 2 | EN 388 3132X | CE 8-11

LEATHER **CANADIAN**

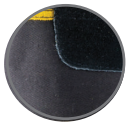
C893

Palm reinforced split canadian gloves

Fleecy lining inside and cotton drill fabric back

7 cm rubbersized cuff with coloured binding tape

Reinforced Knuckle



Vein Protection

Rubberised Cuff

ANSI ISEA-105 A2 5 4

EN 388 4244X

CE 8-11

C042

Russet split canadian leather gloves
Knuckle leather reinforcement
Rubberised cuff with coloured binding tape
Cotton drill back and fleecy lining inside

ANSI ISEA-105 A1 3 2 | EN 388 3132X | CE 8-11

C738

Dyed royal blue split canadian leather gloves
Fleecy lining and knuckle reinforcement and cotton drill back
Rubberised cuff with coloured binding tape

ANSI ISEA-105 A1 3 2 | EN 388 3132X | CE 8-11

C996

Beige grian canadian gloves
Hi vis reflective fabric back
7 cm split cuff, knuckle
Finger tips protection with coloured binding tape
Fleecy lining inside

ANSI ISEA-105 A1 3 2 | EN 388 3132X | CE 8-11

C242

Natural grain canadian leather gloves
Cotton drill fabric and Hi-vis reflective fabric knuckle
Rubberised cuff with coloured binding tape
Fleecy fabric inside

ANSI ISEA-105 A1 3 2 | EN 388 3132X | CE 8-11

LEATHER MECHANICAL

M552

Beige grain water-resistant mechanical gloves
Black polyetser spandex blended fabric on back
Crotch reinforced thumb
Velcro fastening closure

ANSI ISEA-105 A1 2 1 | EN 388 2121X | CE 8-11

M541

Biege grain water resistant mechanical gloves
with dyed water-resistant leather palm
Water-repellent spandex fabric back
Hi-vis finger crotches piping hem binding

ANSI ISEA-105 A1 2 1 | EN 388 2121X | CE 8-11

M659DP

Natural goat grain mechanical glove
Reinforced leather palm and thumb
Mesh fabric back with velcro fastening
Elasticated cuff with branded velcro adjustor

ANSI ISEA-105 A1 2 2 | EN 388 2122X | CE 8-11

M254

Natural goat grain leather mechanical glove
Lather palm, finger tips and thumb
Black spandex fabric back
Elasticated cuff with branded velcro adjustor

ANSI ISEA-105 A1 2 1 | EN 388 2121X | CE 8-11

M354

Soft goat grain leather mechanical glove
Leather finger tips, knuckle and thumb
Grey spandex fabric back
Coloured binding tape

ANSI ISEA-105 A1 2 1 | EN 388 2121X | CE 8-11

M464

Soft goat grain leather mechanical glove
Leather finger tips and thumb
Black spandex fabric back
Coloured binding tape

ANSI ISEA-105 A1 2 1 | EN 388 2121X | CE 8-11

M236

Natural goat leather lined gloves
Black polly spandex fabric with Thinsulate ining
Cotton fleece lining for added comfort
Two-way elasticized tape for flexible fit

ANSI ISEA-105 A1 2 1 | EN 388 2121X | CE 8-11

MACH92

Mechanical-style partially fingerless utility gloves
Suede palm and Silicone anti slip layer fabric for superior grip
Knuckle padding and terry cloth panel for safety and sweat absorption
Breathable polyester back with Velcro cuff for adjustable fit

ANSI ISEA-105 A1 2 1 | EN 388 2121X | CE 8-11

LEATHER **WELDERS**

HAMK31

Orange split heat resistance welder gloves

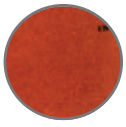
Fire and heat resistant with aluminized Preox fabric back

Heat proof leather impact protection reinforced with aluminum foil

Durable design for heavy-duty welding tasks

15cm Cuff

Aluminized Back



Split Leather

EN 388 4133X

EN 407 413X4X

CE 8-11 EN 12477 TYPE A

KD1279B

Brown split heat proof leather welder gloves with heat and flame resistance
Soft inner lining for comfort during prolonged use.
Withstands contact heat up to100°C for 15 seconds.
Heavy-duty 1.2–1.3 mm thickness for superior protection
480 GSM woven para-aramid back for protection

ANSI ISEA-105 A1 4 3 | EN 388 4133X | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

KD1278B

Yellow heat proof split welder gloves, 1.2–1.3 mm (palm and cuff)
480 GSM woven para-aramid back for protection
Contact heat resistance up to 250°C for 15 sec
Inner lining for heat and flame resistance

ANSI ISEA-105 A3 3 4 | EN 388 2532C | EN 407 423X4X | CE 8-11 | EN 12477 TYPE A

250°c 15 SECS

KWL15

Para-aramid palm leather welder gloves
Knit acrylic fabric lined and para-aramid sewn
15 cm heat resistant split cuff
Upto 250°C contact heat resistant for 15 seconds

ANSI ISEA-105 A2 2 1 | EN 388 2232X | EN 407 423X4X | CE 8-11 | EN 12477 TYPE A

250°c 15 SECS

KWS15

Mitten style fully insulated welder gloves
Para-aramid lined for high temperature resistance
15 cm soft split leather cuff
Upto 250°C contact heat resistant for 15 seconds

ANSI ISEA-105 A2 2 3 | EN 388 2233X | EN 407 423X4X | CE 8-11 | EN 12477 TYPE A

250°c 15 SECS

LEATHER WELDERS

F214

Natural grain welder glove
15 cm split cuff
Heat resistant

ANSI ISEA-105 A1 2 2 | EN 388 2122X | EN 407 413X4X | CE | 8-11 | EN 12477 TYPE A

F224

Natural grain welder glove
15 cm split cuff
Heat resistant

ANSI ISEA-105 A1 2 3 | EN 388 2133X | EN 407 413X4X | CE | 8-11 | EN 12477 TYPE A

F234

Natural combined leather welder glove
Natural grain plam split leather back
15 cm split cuff and heat resistant

ANSI ISEA-105 A1 2 3 | EN 388 2133X | EN 407 413X4X | CE | 8-11 | EN 12477 TYPE A

F571

Natural grain leather welder glove
9 cm natural split cuff with vein reinforcement
Belt-plastic buckle fastening system
TIG gloves

ANSI ISEA-105 A1 2 3 | EN 388 2133X | EN 407 413X4X | CE | 8-11 | EN 12477 TYPE A

H317

Yellow split leather 2-finger mitten for superior heat protection
Made from dyed split leather with reinforced palm for durability
Features ribbed cuff for secure and comfortable fit
Ideal for welding and high-temperature industrial applications
Fleecy lining inside for added comfort

ANSI ISEA-105 A1 4 3 | EN 388 4133X | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

H217

Royal blue and yellow split leather 2-finger mitten style gloves
Constructed from split leather for enhanced heat resistance
Durable design for long-lasting protection
Ideal for welding, foundry, and high-temperature work environments

ANSI ISEA-105 A1 4 3 | EN 388 4133X | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

F962

Natural split leather mittens
Fleecy lining inside
Crotch reinforce thumb

ANSI ISEA-105 A1 4 3 | EN 388 4133X | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

TF290

Natural goat grain welder gloves with 15 cm split cuff
Wooly impact protection for extra safety
Hi-Vis patch on cuff for better visibility
Soft 0.7–0.9mm leather, ideal for heavy-duty work

ANSI ISEA-105 A1 2 2 | EN 388 2122XP | EN 407 X1XXXX | ANSI / ISEA 138 1 | CE 8-11 | EN 12477 TYPE A

LEATHER **WELDERS**

H382

Natural and royal blue split welder gloves

Contact heat resistance Level 3

Inner lining with aluminum foil and 3.00mm foam and fleecy lamination

Royal Blue Split **Inner Lining** **2.0mm Foam Padding**

ANSI ISEA-105 A2 4 4 | EN 388 4244X | EN 407 433X4X | CE 8-11 | EN 12477 TYPE A

H468

Water repellant full grain welder gloves
Excellent thermally insulated gloves
Multilayered gloves with aluminium sheet
20 cm split cuff with velcro adjustment
Heat resistant up to 500°C for 15 seconds

500°c
15 SECS

ANSI ISEA-105 A1 4 3 | EN 388 4133X | EN 407 443X4X | CE 8-11 | EN 12477 TYPE A

F265

Yellow dyed water-repellent grain welder gloves
Natural split leather 15 cm cuff with reflective tape
crotch reinforced Keystone thumb
Fleecy and canvas lining

ANSI ISEA-105 A1 4 3 | EN 388 4133X | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

F867

Brown split heat-resistant welder gloves
Fleecy lining inside for comfort
Reinforced palm for added protection
15 cm dyed brown split cuff stitch with para-aramid thread
Durable design for welding applications

ANSI ISEA-105 A1 4 3 | EN 388 4133X | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

F667

Dyed blue split welder gloves with yellow split palm reinforcement
15 cm split cuff with vein protector
Fleece lined palm and canvas cuff
Heat resistant up to 250°C for 15 seconds

250°c
15 SECS

ANSI ISEA-105 A2 4 4 | EN 388 4244X | EN 407 423X4X | CE 8-11 | EN 12477 TYPE A

LEATHER **WELDERS**

H559

40 cm Yellow cow split welder gloves
Red split reinforcement for durability
Brown acrylic fur lining for insulation
Stitched with para-aramid thread for strength

ANSI ISEA-105 A1 4 3 | EN 388 4133X | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

F272

Beige three tip leather welder gloves
Cotton fleece lined palm
12 cm split cuff stiched with para-aramid thread for strength

ANSI ISEA-105 A1 2 3 | EN 388 2133X | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

F572

Fleece natural grain leather welder glove
Full lined para aramid sewn gloves
15 cm brown split cuff

ANSI ISEA-105 A1 2 3 | EN 388 2133X | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

F426DP

Natural grain and split leather combined welder glove
Reinforce leather palm and split back
Fleece lined palm and cottoned drill lined cuff
Self hum binding

250°c 15 SECS

ANSI ISEA-105 A1 4 3 | EN 388 4244X | EN 407 423X4X | CE 8-11 | EN 12477 TYPE A

F290D

Natural grain leather welder glove
Reinforcement in palm and thumb
Heavy fleece palm lining
9 cm canvas cuff and back

ANSI ISEA-105 A2 4 3 | EN 388 3233X | EN 407 413X4X | CE | 8-11 | EN 12477 TYPE A

H044K

Yellow dyed split welder glove
Seamless para aramid lined palm inside
15 cm split leather cuff
High contact heat resistant

ANSI ISEA-105 A2 4 3 | EN 388 4233X | EN 407 413X4X | CE | 8-11 | EN 12477 TYPE A

H224K

Natural grain leather welder glove
Palm with leather vein protection
Split leather cuff with hi-vis fabric
para-aramid lining and stitching

100°C 15 SECS

ANSI ISEA-105 A1 3 3 | EN 388 3133X | EN 407 413X4X | CE | 8-11 | EN 12477 TYPE A

H544K

Fire and heat resistant welder glove
Lining in 100% wool Sewn para-aramid thread
Heat resistant non woven lining and canvas cuff inside

100°C 15 SECS

ANSI ISEA-105 A1 4 3 | EN 388 4133X | EN 407 413X4X | CE | 8-11 | EN 12477 TYPE A

LEATHER **WELDERS**

F834

Dyed palm reinforced split leather welder glove
40 cm extended split cuff
Lined with non-woven palm and fleece lining jeans cuff
Coloured binding tape

Reinforced Palm

Extended Cuff

Para Aramid Stitching

ANSI ISEA-105 A2 2 2

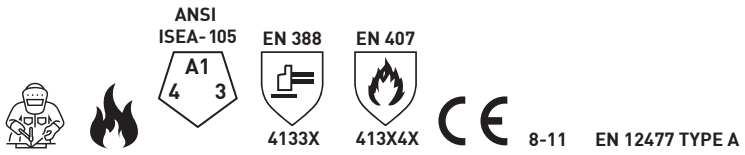
EN 388 4244X

EN 407 433X4X

CE 8-11 EN 12477 TYPE A

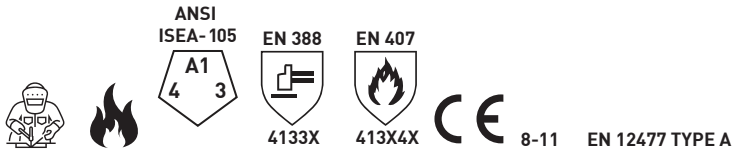
F637

Dyed green split leather welder glove
Back and thumb made from single piece leather
Reinforcement on the thumb and cuff
Fleecy lining and cotton drill cuff inside
Coloured binding tape



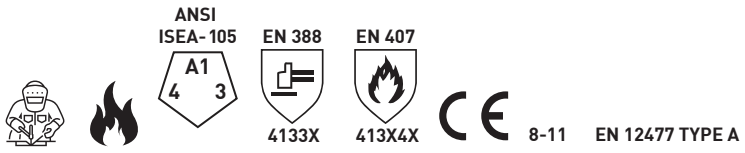
F437

Dyed red split leather welder glove
Heat resistant with cotton fleece lining
15 cm canvas lined cuff
Coloured binding tape



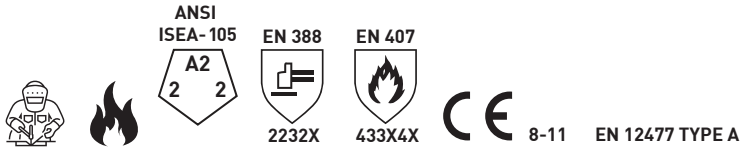
F618

Dyed crotch reinforced split leather welder glove
Heat resistant with fleece lining palm and cotton drill cuff
15 cm canvas lined cuff



F121

High performance hot-mill glove
Heavy cotton drill fabric palm with non woven lining
15 cm double layered heavy cotton drill fabric cuff



LEATHER **WELDERS**

F585

Crotch reinforced yellow grain high voltage welder gloves for durability.
9 cm long PVC cuff for added protection.
Tape fastener with buckle closure for secure fit.
Ideal for welding and heavy-duty industrial work

Fastning Tape

Vein Protection

Extended Cuff

ANSI ISEA-105 A1 2 3 | EN 388 2133X | EN 407 X1XXXX | CE 8-11 | EN 12477 TYPE A

F293

Natural grain leather welder gloves, split cuff
Para-aramid cut D lining, stitched with paraaramid thread
Hi-visibility reflective tape on cuff

ANSI ISEA-105 A5 3 3 | EN 388 3533D | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

F631

Natural grain and split combined welder glove
Reinforced leather palm and split back
Fleece lined palm and cotton drill cuff

ANSI ISEA-105 A1 4 3 | EN 388 2133X | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

F617

Crotch reinforced Split welder gloves
Para-aramid lining for heat and cut resistance
Fleecy fabric linner inside for comfort and cotton drill cuff for durability
Ideal for welding and heavy-duty industrial applications
Stiched with depont kevler thread

ANSI ISEA-105 A7 4 3 | EN 388 4133F | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

TF292

Natural grain welder gloves with 15 cm black split cuff
Fleecy lining and black drill cuff inside
m-Karpals Protect® impact protection for enhanced safety
Designed for welding and heavy-duty industrial work

ANSI ISEA-105 A1 4 3 | EN 388 4133X | EN 407 413X4X | CE 8-11 | EN 12477 TYPE A

LEATHER ACCESSORIES

SLJB01

100% natural grain/split leather welder jacket
Sewn with para-aramid thread
Velcro fastening on front placket
Heat-resistant up to 180°C

CE
EN 11611 Class 2 A1 M - XL

GLJB02

100% Yellow grain/split leather welder jacket
Sewn with para-aramid thread
Velcro fastening on front placket
Heat-resistant up to 180°C

CE
EN 11611 Class 2 A1 M - XL

SLT01

100% natural grain/split leather welder trouser
Sewn with para-aramid thread
Front fly closure
Heat-resistant up to 180°C

CE
EN 11611 Class 2 A1 M - XL

SLHE01

100% natural grain/split leather welding hood
Sewn with para-aramid thread
Front velcro closure
Heat-resistant up to 180°C

CE
EN 11611 Class 2 A1 **M - XL**

SLGE01

100% natural grain/split leather welding leg guard
Sewn with para-aramid thread
Velcro closure
Heat-resistant up to 180°C

CE
EN 11611 Class 2 A1

SLRE01

100% natural grain/split leather welding arm sleeve
Sewn with para-aramid thread
Elasticised closure
Heat-resistant up to 180°C

CE
EN 11611 Class 2 A1

SLAS01

100% natural grain/split leather welding apron
Tape fastened
Heat-resistant up to 180°C

CE
EN 11611 Class 2 A1

Mallcom's exclusive workwear ranges from lightweight to heavy-duty industrial workwear, profile clothing, winter protection, uniforms and corporate casual wear. These provide several degrees of protection and are utilised in hospitality, healthcare and for general industrial purposes. Special fabrics are also custom-made which protects the wearer in environments such as heat, fire and extreme cold temperatures.

BODY **PROTECTION**

OCCUPATIONAL

OSLO

Composition: 210 GSM, 65% polyester 35% cotton

Occupational jacket with full-length sleeves
Secure snap-button fastening for ease of use
Designed for durability in work environments
Comfortable fit for all-day wear

EN ISO 13688:2013/A1:2021 **Size: S - 2XL**

BREMEN

Composition: 210 GSM, 65% polyester 35% cotton

Long-length coat with short sleeves
Snap button closure for a clean, secure fit
Pocket-free design to maintain hygiene
Professional finish for demanding work environments

EN ISO 13688:2013/A1:2021 **Size: S - 2XL**

LUBECK

Composition: 245 GSM, 65% polyester 35% cotton

Elasticised waistband for flexibility and comfort
Belt provision for a secure fit
Two pleats for enhanced comfort and a neat appearance
Welt pockets integrated into the fabric

EN ISO 13688:2013/A1:2021 **Size: S - 2XL**

TRIER

Composition: 210 GSM, 65% polyester 35% cotton

Short coat with long sleeves and durable snap-button fastening
Two patch pockets with button closures
Chest pocket with integrated penholder
Functional and professional design

EN ISO 13688:2013/A1:2021 **Size: S - 2XL**

OCCUPATIONAL

CHEMNITZ

Composition: 10oz, 100% cotton denim, Water repellant finish

Apron with faux leather ties and adjustable metal-buckle neckband
Contrast jeans stitching for a distinctive finish
Spacious patch pocket for practical storage
Integrated cloth holder for added functionality

EN ISO 13688:2013/A1: 2021 Size: S - 2XL

GENEVA

Composition: 210 GSM, 100% cotton

Chef jacket with double-sided pop-button fastening
Round mandarin collar for a classic look
French-style cuffs for added elegance
Extra set of white buttons for practicality and style

EN ISO 13688:2013/A1:2021 Size: S - 2XL

ZURICH

Composition: 210 GSM, 100% cotton

Classic grey-and-white houndstooth chef pants with elasticised waist
Two front and three back belt loops for secure fit
Two side pockets for easy access
Back pocket for added practicality

EN ISO 13688:2013/A1:2021 Size: S - 2XL

GRAZ-T

Composition: 160 GSM, 65% polyester 35% cotton

Women's white tunic with blue piping for a refined look
Two reinforced lower pockets for practicality
Features a convenient front snap-button closure
Ensures all-day comfort

EN ISO 13688:2013/A1:2021 Size: S - 2XL

GRAZ- P

Composition: 65% polyester 35% cotton 160 GSM

Elasticised pants for ease of wear and flexibility
Side pockets on both sides for convenience
Back waist belt with elastic for a secure fit
Front zip closure for added security

EN ISO 13688:2013/A1:2021 Size: S - 2XL

OCCUPATIONAL

RONDA

Composition: 210 GSM, Twill 50% recycled polyester, 50% Tencell® Lyocell

Tunic with officer collar and hidden front gripper closure
Short sleeves and side slits for ease of movement
Back bending clips for added flexibility
Chest pocket for a beeper or watch

EN ISO 13688:2013/A1:2021 Size: S - 2XL

SEVNICA

Composition: 180 GSM, Twill 50% polyester 50% cotton

Women's tunic with mandarin collar and asymmetric closure
Back pleat and side vents for comfort and ease of movement
Machine-washable fabric for easy care
Designed for style and practicality

EN ISO 13688:2013/A1:2021 Size: S - 2XL

LUGO

Composition: 180 GSM, Twill 50% polyester 50% cotton

Women's wrap-style tunic with gripper fastening for a secure fit
Two lower pockets for practicality
Chest pocket for pens or beepers
Contrasting bias neckline for added style

EN ISO 13688:2013/A1:2021 Size: S - 2XL

TRAUN

Composition: 180 GSM, Twill, 50% polyester, 50% cotton

Unisex medical trousers with elastic waist and drawcord
Snap-button closures at the hem for a tailored fit
Designed for professional functionality
Comfortable and practical for everyday wear

EN ISO 13688:2013/A1:2021 Size: S - 2XL

LIGHT

FLORIAD

Composition:
Option 1: 240 GSM, 65% polyester, 35% cotton
Option 2: 210 GSM, 100% cotton

Work coverall with zip closure and elasticised waist for a secure fit
Mobile pocket with bellow in contrast colour for easy access
Chest pocket with gusset and flap for added storage
Back accessories holder for convenience

Mobile Pocket

Zip closure

Elasticized waist tightening

Orange (Bi colour Grey)

Navy Blue (Bi colour Royal Blue)

EN ISO 13688:2013/A1:2021 Size: S - 2XL

KOLDING

Composition:
Option 1: 240 GSM, Twill, 65% cotton 35% polyester
Option 2: 210 GSM, 100% Cotton

Shirt-collar jacket with front zip for a professional look
Two chest pockets for practicality
ABS buttoned sleeves for a secure fit
Comfortable design for everyday wear

Royal Blue Navy Blue Orange

EN ISO 13688:2013/A1:2021 Size: S - 2XL

NORD

Composition:
Option 1: 240 GSM, Twill, 65% cotton 35% polyester
Option 2: 210 GSM, 100% Cotton

Durable trousers with zip fly and elasticised back for comfort
Five belt loops for a secure fit
Front pleats, back pocket, and rule pocket for practicality
Designed for utility and ease of wear

Royal Blue Navy Blue Orange

EN ISO 13688:2013/A1:2021 Size: S - 2XL

LIGHT

GOTLAND

Composition:
Option 1: 240 GSM, 65% polyester 35% cotton
Option 2: 210 GSM, 100% cotton

Bi-coloured coverall engineered for demanding work conditions
Elasticised waist for a secure fit
Perforated elbows and knees for flexibility
Six spacious pockets for practical storage

Grey/Orange

Navy/Royal Blue

Orange/Grey

Royal Blue/Navy

Chest Pocket

Detachable Knee Pads

Knee Pocket

Bi-Colour Design

EN ISO 13688:2013/A1:2021 Size: S - 2XL

ESBERG

Composition: Option: 1 240 GSM, Twill, 65% polyester 35% cotton
Option 2: 210 GSM, 100% cotton

Bi-coloured jacket with elasticised side waist for comfort
Preformed elbows for ease of movement
Five utility pockets for convenience
Durable design for demanding work environments

Orange/Grey Royal Blue/Navy

Grey/Orange Navy/Royal Blue

EN ISO 13688:2013/A1:2021 Size: S - 2XL

BERGEN

Composition: 240 GSM, Twill, 65% polyester 35% cotton

Bi-coloured trousers with elasticised side waist for a secure fit
Four practical pockets for convenience
Comfortable design for all-day wear
Ideal for everyday functionality

Grey/Orange Navy/Royal Blue

Orange/Grey Royal Blue/Navy

EN ISO 13688:2013/A1:2021 Size: S - 2XL

LIGHT

NAPLES

Composition: 240 GSM, 65% Polyester, 35% cotton

Bi-Coloured coverall with velcro adjustment cuff
Two deep pockets with velcro closure
Reinforced knee pads in good oxford
100% polyster PU coating

EN ISO 13688:2013/A1:2021 Size: S - 2XL

BORUSSIA

Composition: 240 GSM, 65% Polyester 35% cotton

Slim-fit work bib trouser with stretch shoulder straps for comfort
Reinforced Cordura® knee pads for durability
Large chest pocket with strap closure for utility
Designed for strength and practical use

EN ISO 13688:2013/A1:2021 EN 14404+A1:2010

PALMA

Composition: 240 GSM, 65% Polyester, 35% cotton

Bi-coloured work jacket reinforced with Oxford 600D PU-coated fabri
Chest pockets with strap closures and pen pocket for practicality
Badge insert for identification
Deep waist pockets for versatile storage and durability

EN ISO 13688:2013/A1:2021 Size: S - 2XL

TOLEDO

Composition: 240 GSM, 65% Polyester, 35% cotton

Slim bi-coloured work trouser with reinforced knee and rear pockets
Oxford PU-coated fabric at knees for durability
Tearproof crotch for added strength
High-waisted back for protection and comfort

EN ISO 13688:2013/A1:2021 Size: S - 2XL

LIGHT

ODESSA

Composition: 240 GSM, 89% Polyester, 11% Spandex

Multifunctional streatch trousers

Multi utility web tape slots pockets for supporting light weight tools

Extendable snap attachment at bottom hem

Water repellent finish

Water Repellent Finish

Form Cut Waist Band

Functional Pocket

Extendable Snap Attatchment

EN ISO 13688:2013/A1:2021 EN 14404+A1:2010

SKAGEN

Composition: 250 GSM, 89% Polyester, 11% Spandex

Durable shorts with elastic waistband, hammer loop, and reinforced seams
Multiple pockets including back pockets with bellows
Leg pockets with flap and zipper for secure storage
D-ring loop for added convenience

EN ISO 13688:2013/A1:2021 Size: S - 2XL

BONN

Composition: 250 GSM, 89% Polyester, 11% Elastane;

Women's dynamic trousers with zip fly and elasticated back waist
Phone, thigh, and ruler pockets with retroreflective stripes
Detachable D-ring badge holder for convenience
Ensures comfortable and professional fit

EN ISO 13688:2013/A1:2021

DUNKIRK

Composition:
Option 1: 260 GSM, 93% nylon, 7% elastane

Multipocket work trousers with reinforced knees, legs, and rear pockets
Oxford PU-coated fabric for durability
Tearproof crotch for added strength
High-waisted back for protection

EN ISO 13688:2013/A1:2021 Size: S - 2XL

LIGHT

JESENICE

Composition:

Option 1: 250 GSM, 34% cotton, 63% polyester, 2% elastane,

Option 2: 240 GSM, 89% cotton 8% polyamide 2% elastane 1% antistatic

Lightweight, durable coverall with stretch material for comfort

Nylon Oxford knees with knee pad pockets

Contemporary fit for freedom of movement

Industrial laundry approved

Front Flap

Knee Pad Pockets

Stretch Material

EN 20471:2013+ A1:2016

EN14404:2010

EN ISO 13688:2013/A1:2021 Size: S - 2XL

DLED

Composition: 280 GSM, 54%Cotton, 46% Polyester

High-visibility work shorts with 4-way stretch panels
Enhanced comfort and freedom of movement
Dirt-, oil-, and water-repellent outer fabric
Soft cotton lining for improved wearability

EN ISO 13688:2013/A1:2021 EN 20471:2013+A1:2016 Size: S - 2XL

RIBNICA

Composition: 250 GSM, 91% Nylon, 9% Elastane,

High-visibility trousers with nail and kneepad pockets for functional
Durable cotton construction with elastic stretch waist panels
Modern fit for a contemporary look
4-way stretch flexibility for ease of movement

EN ISO 13688:2013/A1:2021 EN 20471:2013+A1:2016 Size: S - 2XL

HEAVY

VENICE

Composition: 330 GSM, 100% Cotton

Lined jacket with high zip collar and press-stud back
Functional design for professional use
Ensures comfort in varying work conditions
Provides reliable protection

EN ISO 13688:2013/A1:2021 Size: S - 2XL

DRESDEN

Composition: 340 GSM, 98% cotton 2% elastane

Stretch trousers with low crotch and tapered legs
Cordura® reinforced knee pockets for durability
Stretch panels in the crotch for ease of movement
Calf stretch panels for maximum comfort

EN ISO 13688:2013/A1:2021 Size: S - 2XL

BELGRADE

Composition: 300 GSM, 100% cotton

Durable cotton work pants featuring adjustable kneepads and reinforced utility pockets for maximum comfort
CORDURA®-reinforced nail pockets with tool holders make them ideal for tough jobs

EN ISO 13688:2013/A1:2021 Size: S - 2XL

HALLE

Composition: 350 GSM, 65% Polyester 35% cotton

Waistcoat with front zip and extended back
Reinforced nail pockets for durability
Loose-hanging chest pockets with safety straps
Designed for practicality and convenience

EN ISO 13688:2013/A1:2021 Size: S - 2XL

TALINN

Composition: 320-350 GSM, 65% Polyester 35% cotton

Heavy-duty work shorts reinforced with Cordura® nail pockets
Back, ruler, leg, and thigh pockets for storage
Rugged durability for demanding tasks
Versatile utility for everyday work needs

EN ISO 13688:2013/A1:2021 Size: S - 2XL

POTSDAM

Composition: 290 GSM, 93% polyamide, 7% elastane

Heavy-duty trousers with CORDURA® knee pad and holster pockets
Mesh insert at the back of the knees for comfort
Provides breathability during long work hours
Designed for durability and practical utility

EN ISO 13688:2013/A1:2021 Size: S - 2XL

HEAVY

BUCH

Composition: Option 1: 260 GSM, 99% Cotton, 1% Antistatic
Option 2: 220 GSM, 55% Modacrylic, 43% Polyester, 2% Antistatic
Option 3: 240 GSM, 88% Cotton, 12% nylon

Certified protection against molten metal splash
Non-magnetic, nickel- and ferrous-free design
UPF-rated fabric with flame-resistant industrial wash tape
Integrated radio loops, suitable for ATEX environments

Adjustable Waist

Hook and Look Cuffs

40+ UPF Rated Fabric

EN 1149-5 EN 61482 EN ISO 11611 EN ISO 11612
Class 1-A1, A2 A1, A2, B1, C1, E2, F1

EN ISO 13688:2013/A1:2021 Size: S - 2XL

PANKOW

Composition: Option 1: 260 GSM, 99% Cotton, 1% Antistatic
Option 2: 220 GSM, 55% Modacrylic, 43% Polyester, 2% Antistatic
Option 3: 240 GSM, 88% Cotton, 12% nylon

Anti-static, acid-protective and flame-retardant properties
Dirt-resistant finish for long-lasting performance
Protection against electric arcs and occasional welding arcs
Crotch seams with reinforced belt loops and reflective detailing

EN ISO 13688:2013/A1:2021 Size: S - 2XL

COMO

Composition: 300 GSM, 100% Cotton FR

Sleeveless cotton coveralls for comfort and durability
CORDURA® reinforcement at knees and back pockets
Loose-hanging chest pockets with a knife holder
Bellowed front pockets for added convenience

EN ISO 13688:2013/A1:2021 Size: S - 2XL

DUBLIN

Composition: 300 GSM, 100% Cotton FR

Heavyweight cotton bib and brace coverall
Wide elastic braces with quick-release buckles
Knee protection pockets and bellowed back pockets
CORDURA® reinforcement on knees and back pockets

EN ISO 13688:2013/A1:2021 Size: S - 2XL

SUSTAINABLE

ZARAGOZA

Composition: 270 GSM, 65% recycled polyester, 35% organic cotton

Bib trousers with wide elastic braces and quick-release buckles for comfort

Reinforced with Cordura® on knees, hems, and pockets

Multiple utility compartments for tools

Includes knife holder and pen pocket

Knee Pockets

D-ring

Buckles

Knee Pad

Global Recycled Standard

OEKO-TEX® CONFIDENCE IN TEXTILES STANDARD 100 2017OK0969 AITEX Tested for harmful substances. www.oeko-tex.com/standard100

EN ISO 13688:2013/A1:2021 EN 14404+A1:2010 Size: S - 2XL

ALMERIA

Composition: 270 GSM, 65% recycled polyester, 35% organic cotton

Durable trousers with stretch panels at crotch, knees, and back
Cordura® reinforced major pockets for durability
Leg pockets with zippers for secure storage
Extension feature at the hem for added versatility

Global Recycled Standard

EN ISO 13688:2013/A1:2021 Size: S - 2XL

VAXJO

Composition: 270 GSM, 65% recycled polyester, 35% organic cotton

Work shorts with Cordura® reinforced back and ruler pockets
Extra-wide ruler pockets for added storage
Compartments for pens, knives, and tools
Designed for durability and practicality

Global Recycled Standard

EN ISO 13688:2013/A1:2021 Size: S - 2XL

MULTINORM

MADGEBUG

Composition: 270 GSM, Satin 60% Modacrylic, 40% Viscose

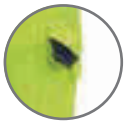
Flame-retardant coverall with back pleats and elasticised waist for comfort

Triple-stitched seams in vulnerable areas for durability

Extendable leg hems for added strength

Reflective tapes for visibility in low light

Elasticised waist



Knee Pocket

Reflective Tapes

EN 11611 EN 11612 EN 13034 EN 1149-5 EN 61482 EN 20471

Class III

EN ISO 13688:2013/A1:2021 Size: S - 2XL

NANTES

Composition: 245 GSM, 49% Modacrylic 42% Cotton, 5% Para Aramid, 3% Nylon, 1% Antistatic,

Hi-vis Multinorm jacket in tear-resistant ripstop fabric
Adjustable Velcro sleeve cuffs for a secure, comfortable fit
Designed for tough work environments
Ideal for long shifts and high visibility

EN 11611 EN 11612 EN 13034 EN 1149-5 EN 61482 EN 20471

EN ISO 13688:2013/A1:2021, EN 20471:2013 + A1:2016 Size: S - 2XL

LOMMEL

Composition: 245 GSM, 49% Modacrylic, 42% Cotton, 5% Para Aramid, 3% Nylon, 1% Antistatic

Hi-vis Multinorm trousers with hidden buttons and reinforced back pockets
Flame-retardant reflective tapes with double-stitched seams
CORDURA® knee reinforcement for durability
Designed for safety and long-lasting use

EN 11611 EN 11612 EN 13034 EN 1149-5 EN 61482 EN 20471

EN ISO 13688:2013/A1:2021, EN 20471:2013 + A1:2016 Size: S - 2XL

KAMPEN

Composition: 270 GSM, 60% Modacrylic 40% Viscose

Multinorm trousers with robust flame resistance for demanding tasks
Smart storage pockets and reinforced back panels
Double-seamed reflective tapes for visibility
CORDURA® knee reinforcements for durability

EN 11611 EN 11612 EN 13034 EN 1149-5 EN 61482 EN 20471

EN ISO 13688:2013/A1:2021, EN 20471:2013 + A1:2016 Size: S - 2XL

WELDING

CHARLOTTE

Composition: 300 GSM, 100% cotton treated FR

Green FR coverall provides full-body flame protection

Durable, breathable fabric ensures all-day comfort

Front snap-button closure with functional pockets

Ideal for welding, foundry, and metalwork environments

Functional Pocket

Snap Button

Breathable Fabric

EN 11611 A1, A2

EN 11612 A1, A2, B1 C1, F1

EN 61482

EN ISO 13688:2013/A1:2021 Size: S - 2XL

BOLOGNA

Composition: 300 GSM, 100% Cotton – FR Treated

30-inch green FR jacket made from 9 oz. flame-resistant cotton
Durable construction with reinforced stitching for long-lasting wear
Tailored fit for comfort and ease of movement
Breathable fabric for all-day wear and flame protection

EN 11611 A1, A2 EN 11612 A1, A2, B1 C1, F1

ISO 13934-1 ISO 13937-2

ZAGREB

Composition: 300 GSM, 100% Cotton – FR Treated

FR hood providing full head and neck protection
Ergonomic design for comfort and coverage
Breathable, heat-resistant material
Fits easily under helmets or protective headgear

EN 11611 A1, A2 EN 11612 A1, A2, B1 C1, F1

ISO 13934-1 ISO 13937-2

ALABAMA

Composition: 300 GSM, 100% cotton treated FR

FR green sleeves for heat and flame protection
Available in 18-inch and 25-inch lengths for flexible use
Elastic cuffs ensure a secure, comfortable fit
For safe, easy movement in industrial settings

EN 11611 A1, A2 EN 11612 A1, A2, B1 C1, F1

ISO 13934-1 ISO 13937-2

FLAME RETARDANT

BELLARUS

Composition:

Option 1: 220 GSM, 100% Cotton treated FR

Option 2: 180 GSM, 50%Modacrylic/38%Cotton/10%P-Aramid/2%Antistatic

Option 3: 260 GSM, 100% Cotton treated FR

Option 4: 220 GSM, 50%Modacrylic/38%Viscose/10%P-Aramid/2%Antistatic

Flame-retardant anti-static coverall protecting against radiant heat

Two-tier knee pad pockets for added durability

Flame-resistant industrial wash tape for safety

Two-way zip for quick and practical access

Zip Closure

Reflective Tapes

Adjustable Snap Buttons

Flap Pockets

EN 1149-5 EN 61482 EN ISO 11611 Class 1-A1, A2 EN ISO 11612 A1, B1, C1, F1 ATPV 6 CAL/CM² ASTM F 1959 2 CAT NFPA 2112

EN ISO 13688:2013/A1:2021 Size: S - 2XL

LISBON

Composition: 270 GSM, 80% Cotton 19% Polyester, 1% Anti-static

Insulated FR parka with dual zip-button closure
Multiple chest, hip, sleeve, and flap-covered pockets
FR reflective tape for enhanced visibility
Designed for protection and practical use

EN 1149-5 | EN ISO 11611 Class 1-A1, A2 | EN ISO 11612 A1, B1, C1, F1 | EN 61482 | NFPA 2112 | OEKO-TEX STANDARD 100

EN ISO 13688:2013/A1:2021 Size: S - 2XL

FULTON

Composition: 310 GSM, 80% Cotton 19% Polyester, 1% Anti-static

Hi-vis shell jacket with fleece-lined collar
Removable, adjustable hood stored in the collar
Velcro-adjustable sleeve ends for a secure fit
Designed for comfort and protection

EN 1149-5 | EN ISO 11611 Class 1-A1, A2 | EN 61482

EN ISO 13688:2013/A1:2021 Size: S - 2XL

RIGA FR

Composition:
Option 1: 100% Cotton FR Treated 220GSM
Option 2: 50% Modacrylic, 38% Cotton, 10% m-Aramide
2% Antistatic, 180 GSM

Shirt with concealed snap button closure at front
Two front pockets with flap covers and snap buttons
Cuff adjustment with concealed snap button closure
Designed for practicality and a clean, professional look

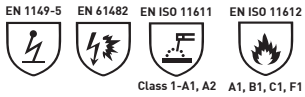
EN 1149-5 | EN ISO 11611 Class 1-A1, A2 | EN ISO 11612 A1, B1, C1, F1 | ATPV 12 CAL/CM² ASTM F 1959 | 2 CAT | NFPA 2112 | Navy Blue

FLAME RETARDANT

KINGSTON

Composition: 350 GSM, 85% Cotton, 14% Polyester 7% antistatic

Durable anti-flame overall with robust hidden metal zippers
Reinforced with bellowed back panel for strength
Pre-bent elbows, reflective details for comfort and visibility
Velcro sleeve adjustments for industrial wash durability

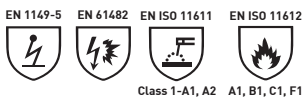


EN ISO 13688:2013/A1:2021

OLEAN

Composition: 260 GSM, Ripstop 49% Modacrylic, 42% Cotton, 5% Para Aramid, 3% Nylon, 1% Antistatic

FR bib trousers with CORDURA® reinforced knees
Elastic braces for a comfortable fit
Smart pocket designs for practical storage
Durable and functional for demanding work environments



EN ISO 13688:2013/A1:2021

BEACON

Composition: 310 GSM, 80% Cotton, 19% Polyester, 1% Antistatic,

Premium FR work shirt, non-metal for full protection
Chest pockets with pen slots for practicality
Covered push-button closures for a clean finish
Adjustable sleeves with hidden plastic buttons for comfort

EN 1149-5 EN 61482 EN ISO 11611 Class 1-A1, A2 EN ISO 11612 A1, B1, C1, F1

EN ISO 13688:2013/A1:2021 Size: S - 2XL

LORIENT

Composition: 310 GSM, 80% Cotton, 19% Polyester, 1% Antistatic,

Antistatic 310 GSM trousers for hazardous environments
Stretch panels at critical points for ease of movement
Pre-bent knees and reinforced ruler pocket for durability
Double-seamed flame-retardant reflective tapes for safety

EN 1149-5 EN 61482 EN ISO 11611 Class 1-A1, A2 EN ISO 11612 A1, B1, C1, F1

EN ISO 13688:2013/A1:2021 Size: S - 2XL

BUCHAREST FR

Composition:
Option 1: 220 GSM, 100% Cotton FR Treated
Option 2: 180 GSM 50% Modacrylic, 38% Cotton, 10% m-Aramide
2% Antistatic

Trouser with elasticised waist and zipper
Concealed button closure with one back pocket
Thigh pocket on the left side
Ruler pocket on the right side

EN 11612 A1-A2 EN 1149-5 EN ISO 11611 Class 1-A1, A2

Navy Blue

FLAME RETARDANT

PARIS

Composition:

Option 1: 220GSM, 100% Cotton treated FR,

Option 2: 50%Modacrylic/38%Cotton/10%P-Aramid/2%Antistatic,

Option 3: 100% Cotton treated FR and

Option 4: 50%Modacrylic/38%Viscose/10%P-Aramid/2%Antistatic

Bi-coloured flame-retardant coverall with press-snap closure

Designed with multiple utility pockets for functional storage

Ventilated action-back panels for mobility and airflow

Reflective tapes and 2-way zipper with Velcro closure

Velcro Closure

Hi-vis Taping

Segmented FR

EN 20471:2013 A1:2016 EN ISO 11612 A1, B1, C1, F1 1 CAT NFPA 2112

EN ISO 13688:2013/A1:2021 Size: S - 2XL

CELGIC

Composition: 300 GSM, 75% cotton, 24% polyester, 1% antistatic

Flame-retardant bi-coloured jacket for heat protection
Designed to meet demanding industrial safety requirements
Features functional chest pockets with stud flap closures
Adjustable cuffs and concealed front studs

EN 1149-5 EN 61482 EN ISO 11611 Class 1-A1, A2 EN ISO 11612 A1, B1, C1, F1

EN ISO 13688:2013/A1:2021 Size: S - 2XL

PIRAN

Composition: 300 GSM, 75% cotton, 24% polyester, 1% antistatic

Flame-retardant anti-static arc flash trousers
Partially elasticated waistband for comfort and flexibility
Features practical bellows leg pockets for added storage
Includes a secure rear patch pocket with hook-and-loop closures

EN 1149-5 EN 61482 EN ISO 11611 Class 1-A1, A2 EN ISO 11612 A1, B1, C1, F1

EN ISO 13688:2013/A1:2021 Size: S - 2XL

HI-VIS

SEZANA

Composition: 260 GSM, 65% Polyester, 35% cotton

Water-repellent, windproof, breathable jacket with hi-vis reflectors
Designed for reliable performance in demanding work environments
Wide hems and cuffs with knitted inserts enhance comfort
Detachable hood ensures adaptability in varied working conditions

EN 20471:2013
A1:2016

EN ISO 13688:2013/A1:2021 Size: S - 2XL

GENK

Composition: 260 GSM, 65% Polyester, 35% cotton

Hi-vis trousers with superior reflectors and an ergonomic design
Built for comfort and durability
Elasticated side panels in the waistband enhance fit and flexibility
Reinforced pockets and functional thigh compartmentsality.

EN 20471:2013
A1:2016

EN ISO 13688:2013/A1:2021 Size: S - 2XL

CHARLEROI

Composition: 260 GSM, 65% Polyester, 35% cotton,

Hi-vis breathable, stretch jacket
Reflectors enhance low-light visibility
Protective collar and chin guard provide added safety
Modern ergonomic fit ensures comfort throughout the day

EN 20471:2013
A1:2016

EN ISO 13688:2013/A1:2021 Size: S - 2XL

SEMIC

Composition: 260 GSM, 65% Polyester, 35% cotton,

Hi-vis shorts with colour contrast and reflectors
Lightweight, elastic, and quick-drying fabric for all-day comfort
Designed for optimal performance in warm conditions
Ideal for outdoor visibility and mobility

EN 20471:2013
A1:2016

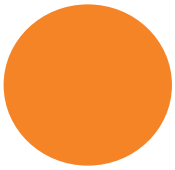
EN ISO 13688:2013/A1:2021 Size: S - 2XL

HI-VIS VESTS

PROCLO K383

Composition: 130 GSM, 100% Polyester

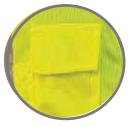
Protective hi-vis vest with reflective tape on shoulders and chest
Includes an ID card holder for easy identification
Features a Velcro chest pocket and black piping for style
Secure zip fastening ensures safety and a snug fit



Proclo M382

ID Card Holder

Zip Fastening



Velcro Chest Pocket

EN 20471:2013
A1:2016

EN ISO 13688:2013/A1:2021 Size: S - 2XL

PROCLO N382

Composition: 130 GSM 100% polyester

Protective hi-vis vest with reflective tape on shoulders and chest
Designed for high visibility in demanding environments
Simple Velcro closure allows quick and easy wear
Lightweight construction ensures comfort during extended use

EN 20471:2013 A1:2016

EN ISO 13688:2013/A1:2021 Size: S - 2XL Fluoresent Yellow-Green

PROCLO M592

Composition: 130 GSM, 100% Polyester Mesh

Protective hi-vis vest with reflective tape on shoulders and chest
Designed for high visibility and safety
Black piping adds a clean, stylish finish
Velcro closure ensures durable and easy wear

EN 20471:2013 A1:2016

EN ISO 13688:2013/A1:2021 Size: S - 2XL Fluoresent Yellow-Green

PROCLO M383

Composition: 130 GSM, 100% Polyester

Protective hi-vis vest with reflective tape for enhanced visibility
Black piping adds a neat, finished look
Velcro fastening allows easy and secure wear
Engineered for reliable safety in demanding environments

EN 20471:2013 A1:2016

EN ISO 13688:2013/A1:2021 Size: S - 2XL Fluoresent Yellow-Green

WINTER RANGE

BRAGA

Composition: Teflon™ - 185 GSM, 100% Polyester with DWR finish

Insulated coverall with quilted lining and fleece collar

Knitted wind cuffs and elasticated waist help retain warmth

Multiple functional pockets provide practical storage

Touch-and-close fastenings reduce heat loss

Fleece Collar

Chest Pocket

Elecisized Waist

EN ISO 13688:2013/A1:2021 Size: S - 2XL

DARWIN

Composition: 330 GSM, 65% Polyester, 35% Cotton

Multi-pocket body warmer with detachable sleeves and fleece collar
Elasticated side panels enhance fit and flexibility
Ergonomic pocket design adds practical storage
Designed for comfort and functionality in varied conditions

EN ISO 13688:2013/A1:2021 Size: S - 2XL

BUNBERRY

Composition: 330 GSM, 65% Polyester, 35% Cotton

Winter sleeveless jacket with zipper and elastic waist
Contrast stitching adds a stylish, durable finish
Practical chest pockets provide storage for mobile and pens
Designed for comfort and functionality in cold conditions

EN ISO 13688:2013/A1:2021 Size: S - 2XL

WINTER RANGE

ALBORG

Composition: 330 GSM, Twill 100% cotton
Fluorescent: 85% polyester and 15% cotton

Winter jacket with pre-bent sleeves and hi-vis details
Fleece lining provides added warmth
Dual chest pockets offer practical storage
Extended back ensures comfort and mobility

EN ISO 13688:2013/A1:2021 Size: S - 2XL

NAMSOS

Composition: 330 GSM, Twill 65% Polyester, 35% Cotton

Insulated winter parka with wind- and waterproof breathable fabric
Recycled fibre lining adds warmth and eco-friendly comfort
Ventilation panels and pre-bent arms for mobility
Reflective stripes ensure visibility and safety in low-light conditions

EN ISO 13688:2013/A1:2021 Size: S - 2XL

STAVENGER

Composition: 330 GSM, Twill 65% Polyester, 35% Cotton

Fleece-lined water-resistant body warmer with extended back
One-way zip allows easy wear and removal
Chest flap pockets provide practical storage
Versatile fit makes it ideal as a layer over jackets or fleeces

EN ISO 13688:2013/A1:2021 Size: S - 2XL

TROMSO

Composition: 330 GSM, Twill 100% cotton

Lined bi-coloured waterproof breathable coverall
Ventilation panels enhance airflow and comfort
Knee pockets and adjustable leg/sleeve ends
Hidden two-way zip ensures safety and easy wear

EN ISO 13688:2013/A1:2021 Size: S - 2XL

DENIM

GRENAA

Composition: 390 GSM, 100% Cotton Treated FR

Denim jacket with FR snap-button breast and lower pockets

Adjustable cuffs provide a custom fit

Mesh-lined back ventilation enhances airflow

Flap-secured zip closure ensures safety and ease of wear

Zip Closure

Snap Button Pocket

Adjustable Cuff

EN ISO 13688:2013/A1:2021 Size: S - 2XL

CATANIA

Composition: 370 GSM, 85% Cotton, 15% CORDURA® Nylon

CORDURA® denim waistcoat with detachable nail pockets
Double front zippers allow width adjustment for a custom fit
Mesh panels provide lightweight ventilation
Reinforced construction ensures durability for rugged use

EN ISO 13688:2013/A1:2021 Size: S - 2XL

MESA

Composition: 370 GSM, 85% Cotton, 15% CORDURA® Nylon

Durable denim shirt with reinforced elbows and flap closure
Zippered chest pocket provides secure storage
Inner Velcro pocket adds extra practicality
Adjustable sleeve ends ensure a comfortable fit

EN ISO 13688:2013/A1:2021 Size: S - 2XL

DENIM

NYBORG

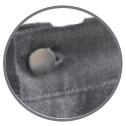
Composition: 390 GSM, 100% Cotton Treated FR

Flame-resistant denim trousers with concealed waist button

Reinforced back pockets secured with FR snap buttons

Designed for durability and protection

Built for reliable safety and comfort



Shank Button

Back Pocket

FR Material

EN ISO 13688:2013/A1:2021 Size: S - 2XL

FORLI

Composition: Stretch denim, 98% Cotton, 2% elastane, 100z

Stretch denim trousers combining strength and flexibility
CORDURA® material provides knee protection
Tapered legs and stretch zones enhance mobility
Reinforced knee pockets ensure comfort and durability

EN ISO 13688:2013/A1:2021 Size: S - 2XL

OMAHA

Composition: Stretch denim, 98% Cotton, 2% elastane, 10oz

Denim shorts with stretch panels for enhanced mobility
Equipped with knife holder and hammer loops for tools
Reinforced pockets provide durability
Mesh phone storage adds practical convenience

EN ISO 13688:2013/A1:2021 Size: S - 2XL

WOMEN'S WEAR

NANCY

Composition: 305 GSM, 91% polyester, 9% Elastane

Work trousers with two-way stretch for flexibility

Waist features warp knit fabric for added comfort

Multiple functional pockets provide practical storage

Knee reinforcements enhance durabilit

High Waist band

Knee Pockets

Knee Reinforcements

EN ISO 13688:2013/A1:2021 Size: S - 2XL

BOHINJ

Composition: 250 GSM, Matty 63% cotton, 35% polyester, 2% elastane

Women's work jacket with adjustable waist and extended back
High collar provides added protection
Flap-secured chest pockets offer practical storage
Inner wristlets enhance comfort and safety

EN ISO 13688:2013/A1:2021 Size: S - 2XL

TERNI

Composition: 250 GSM Mattty 63% cotton, 35% polyester, 2% elast

Women's stretch trousers with tool and knee pockets
Reinforced panels provide durability
Multiple utility compartments offer practical storage
Stretch zones ensure flexibility in key area

EN ISO 13688:2013/A1:2021 Size: S - 2XL

KNITWEAR

CORDOBA

Composition: 100% Polyester, 160gsm micro mesh fabric

Hi-vis short-sleeve polo in breathable, moisture-wicking mesh
Reinforced chest pocket adds durability
Pen insert provides practical utility
Designed for comfort and high visibility

EN ISO 13688:2013/A1:2021 Size: S - 2XL

PAMPLONA

Composition: 280 GSM, 100% polyester fleece fabric

Hi-vis compliant jacket with full zip and reflective tapes
Adjustable waist ensures a comfortable fit
Dual side pockets with zips provide secure storage
Warm fleece lining adds comfort in cold conditions

EN ISO 13688:2013/A1:2021 Size: S - 2XL

SEGOVIA

Composition: 100% Polyester, 160 GSM micro mesh fabric

Hi-vis long-sleeve polo in breathable, easy-care fabric
Moisture-wicking finish keeps the wearer dry
Chest pocket with pen insert adds practical utility
Straight hem with side splits ensures comfort and mobility

EN ISO 13688:2013/A1:2021 Size: S - 2XL

MALAGA

Composition: 280 GSM, 100% polyester soft shell fabric

Softshell windcheater with zippered hand and chest pockets
Adjustable drawstring at the hem ensures a snug fit
Designed for comfort and mobility
Compatible with additional warming layer

EN ISO 13688:2013/A1:2021 Size: S - 2XL

RAINWEAR

ARCUS

Protective rainwear with Velcro-zip, elastic cuffs, and detachable hood
Ventilated back panels enhance airflow and comfort
Practical storage pockets add functionality
Matching elasticated pants provide full coverage

Adjustable toggles and elesticated drawcord

Velcro Closure

Elasticated Cuffs

EN 343

Black/Grey Blue/Grey Blue/Olive EN ISO 13688:2013/A1:2021 Size: S - 2XL

STRATUS

Silver reflective piping on jacket and pants enhances visibility
Durable rain suit features reflective piping and branding
Multi-pocket jacket with hood provides practical storage
Elasticated waistband ensures a snug fit for full waterproof protection

EN 343

EN ISO 13688:2013/A1:2021 Size: S - 2XL **Black** **Grey** **Blue**

CUMULUS

Composition: Height of PONCHO including hood: 147 cm; Width of PONCHO : 132 cm; 1/2 Width of Hood: 25 cm

Poncho with snap-button side closures and extended backpack coverage
Drawstring hood provides adjustable protection
Reflective logo enhances visibility
Compact pouch allows easy portabilit

EN 343

EN ISO 13688:2013/A1:2021 Size: S - 2XL **Olive** **Grey** **Blue**

BARI

Composition: 190 GSM, Material composition of outer material: 300 D Oxford 100% Polyester PU coated

Lining material: 100% polyester mesh
Breathable, waterproof jacket with fleece collar and taped seams
Removable hood and multiple inner and outer pockets
Adjustable sleeves with thumbholes ensure secure comfort

EN ISO 13688:2013/A1:2021, EN 20471:2013 + A1:2016 Size: S - 2XL

KNITWEAR

KIEL

Composition: 60% Mod acrylic, 38% Cotton, 2% Anti Static

Lightweight polo in Modacrylic-cotton anti-static blend
Buttoned neck with plastic buttons and FR embroidery
Combines style with safety for workplace use
Flame-resistant construction ensures reliable protection

EN ISO 11611 Class 1-A1, A2 EN ISO 11612 A1, B1, C1, F1

EN ISO 13688:2013/A1:2021 Size: S - 2XL

FULL SLEEVE FR TSHIRT

FR crew-neck polo with Multinorm certification
Protects against flame, arc flash, static, and visibility hazards
Offers a professional fit for workplace readiness
Comfort and performance for safe conditions

EN ISO 11611 Class 1-A1, A2 EN ISO 11612 A1, B1, C1, F1

EN ISO 13688:2013/A1:2021 Size: S - 2XL

HANKO

Composition: 210 GSM-RIB, 60% Mod acrylic, 38% Cotton, 2% Anti Static

FR non-metal Long Johns for comfort and coverage
PFAS-free, elasticated waist for durability and ease
Built-in FR for reliable protection under gear
Designed for safety and comfort during extended use

EN ISO 11611 Class 1-A1, A2 EN ISO 11612 A1, B1, C1, F1

EN ISO 13688:2013/A1:2021 Size: S - 2XL

RANDERS

Composition: 210 GSM-RIB, 60% Mod acrylic, 38% Cotton, 2% Anti Static

Flame-resistant balaclava engineered for harsh, high-risk environments
Lightweight, close-fit design ensures comfort and full coverage
Provides protection against heat, flames, and electrical hazards
Essential for safety in hazardous work conditions

EN ISO 11611 Class 1-A1, A2 EN ISO 11612 A1, B1, C1, F1

EN ISO 13688:2013/A1:2021 Size: S - 2XL

DISPOSABLES

JD7AY

Composition: 60 GSM, Lightweight

Disposable 60 GSM coverall for infectious disease control
Made from breathable, water-resistant SSMMS fabric
Elastic cuffs, waist, and ankles allow freedom of movement
Designed for safety and comfort in medical or hazardous environments

EN 13034:2005 + A1:2009 (Protection against liquid chemicals) ,
EN 14605:2005+A1:2009 (Protective clothing against liquid chemicals) ,
EN ISO 13982-1:2004+A1:2010 (Protective clothing for use against solid particulates)
EN 14325:2004 (Protective clothing against chemicals) EN ISO 13688:2013

LB6JZ

Composition: 65 GSM, Lightweight Disposable full sleeve apron for health care applications

Lightweight 65 GSM disposable apron for healthcare use
Provides reliable biohazard protection
Secure strap fastening ensures a snug fit
Designed for safety and convenience in medical settings

EN ISO 13688:2013/A1:2021 Size: S - 2XL

LA2EZ

40 GSM non-laminated disposable gown
Provides reliable protection against biohazard risks
Lightweight construction ensures comfort during extended use
Secure strap closure system for easy fastening
Designed for safe and practical daily application

EN ISO 13688:2013/A1:2021 Size: S - 2XL

KC2GZ

40 GSM Disposable shoe cover made of laminated fabric
Features 8 mm elastic closure for a secure fit
Designed for use in healthcare environments
Ensures comfort during extended wear
Provides reliable protection in medical settings

EN ISO 13688:2013/A1:2021

MP29G

Reusable gown for protection against biohazard risks
Made from coated 90 GSM polyester fabric with PU finish
Durable design allows multiple uses
Secure strap closure ensures reliable protection

EN ISO 13688:2013/A1:2021, EN 343:2019 Size: S - 2XL

mallcom®

We excel in producing safety shoes that provide unparalleled protection in heavy-duty industrial environments. Our range features anti-slip and waterproof designs, ensuring stable footing and safeguarding against wet conditions. Lightweight yet impact-resistant, these shoes offer comfort without compromising safety. Designed for breathability, they keep feet cool and dry during long hours. Perfect for construction, manufacturing, and hazardous workplaces, our shoes are engineered to meet the toughest demands, providing comprehensive protection where it matters most.

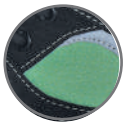
FEET **PROTECTION**

NEW **LAUNCH**

MIL2607P

Recycled suede microfibre upper for enhanced sustainability
200 J impact-resistant 522 composite toe cap for safety
Mid-ankle design offering added stability and support
Dual-density bio-based PU/PU sole for durability and protection

Electrical Hazard proof
Impact resistant
Energy absorbent
Puncture resistant
Oil resistant
Slip resistant
Hydrocarbon resistant
Ladder grip


Recycled Textile


Bio-PU


Pull Teb

EN ISO 20345:2022 + A1:2024 EU 34-47

MIL2604P

Knitted upper with orange and black TPU fusing
200 J impact-resistant 522 composite toe cap for safety
High-ankle construction for enhanced support
Dual-density Phoenix PU/PU sole for durability and protection

EN ISO 20345:2022 + A1:2024 **EU 34-47** **F 2413-24**

MIL2606F

Cow grain leather upper for strength and durability
Breathable air mesh lining for enhanced comfort
522 steel toe cap for impact protection
Dual-density PU/PU Griffin™ sole for reliable performance

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MIL2607F

Beige upper crafted from crazy horse leather
Rugged finish with enhanced comfort
522 impact-resistant composite toe cap for safety
Griffin™ PU/Rubber sole for durable, reliable performance

EN ISO 20345:2022 + A1:2024 **EU 34-47** **F 2413-24**

MIL2603F

Cordura and suede microfiber upper for strength and flexibility
Breathable air mesh lining for all-day comfort
522 steel toe cap with overnose for impact protection
Griffin™ PU/PU sole for durability, grip, and performance

EN ISO 20345:2022 + A1:2024 **EU 35-48**

NEW **LAUNCH**

MIL2602P

Knitted upper with TPU and suede microfiber construction
Black Femina lining for enhanced comfort
FG toe cap with Phoenix PU/PU sole for durability and grip
Certified FO, SR, and LG for comprehensive safety

EN ISO 20345:2022 + A1:2024 **EU 34-47**

INCAS 01

Synthetic suede microfiber sandals for durability
Moisture-wicking, breathable 3D textile lining for comfort
200 J 522 steel toe cap with 1100N puncture-resistant steel plate
Dual-density Phoenix PU/PU sole for stability and reliable grip

EN ISO 20345:2022 + A1:2024 **EU 35-48**

INCAS 03

Dark grey suede upper with breathable 3D textile lining
200 J 522 steel toe cap with 1100 N puncture-resistant steel plate
Dual-density Phoenix™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

PANTHER 01

Waterproof nubuck leather upper with 3D spacer lining
200 J steel toe cap with overnose for enhanced protection
1100 N puncture-resistant steel plate insole
Dual-density Oliver™ PU/PU sole, with optional TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

INCAS 15

Synthetic suede microfiber upper with 3D spacer lining
200 J impact-resistant 522 fiberglass toe cap
1100 N puncture-resistant para-aramid insole
Dual-density Phoenix™ PU/PU sole with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 34-47**

INCAS 11

Synthetic suede microfiber upper with 3D spacer lining
200 J impact-resistant 522 fiberglass toe cap
1100 N puncture-resistant para-aramid insole
Dual-density Phoenix™ PU/PU sole; PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 34-47**

RUFUS M01

Breathable microfiber upper with 3D spacer lining
200 J impact-resistant steel toe cap
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

INCAS 07

Waterproof teal nubuck leather upper with breathable 3D textile lining
200 J impact-resistant 522 steel toe cap and 1100 N steel plate
Dual-density Phoenix™ PU/PU sole for durability and grip
Also available in PU/PU with TPU patch or PU/Rubber

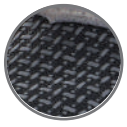
EN ISO 20345:2022 + A1:2024 **EU 35-48**

FAST **LACING**

MIL2603P

Black suede microfiber upper with TPU fusing and quick lace
200 J impact-resistant 522 composite toe cap for safety
Low-ankle design for added support
Dual-density Phoenix PU/PU sole for durability

Electrical Hazard proof
Impact resistant
Energy absorbent
Puncture resistant
Oil resistant
Slip resistant
Hydrocarbon resistant
Ladder grip



Microfibre Upper

TPU Fusing

Quick Lacing

EN ISO 20345:2022 + A1:2024 EU 34-47

MIL2604F

Suede microfiber upper with Griffin mould construction
522 steel toe cap for impact protection
Dual-density PU/Rubber sole for durability and grip
Certified FO, SR, HRO, and LG for comprehensive safety

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MIL2606P

Black suede microfiber upper for strength and style
200 J impact-resistant 522 steel toe cap for safety
Mid-ankle design for added support
Dual-density Phoenix™ PU/RU sole for durability and protection

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MALLARD 09

Waterproof crazy horse leather upper with breathable 3D textile lining
200 J impact-resistant 522 steel toe cap and 1100N steel plate
Dual-density Griffin™ PU/PU sole for durability and grip
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MALLARD 08

Waterproof crazy horse leather upper with breathable 3D textile lining
200 J impact-resistant 522 steel toe cap and 1100N steel plate
Dual-density Griffin™ PU/PU sole for durability and grip
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

OCCUPATIONAL

INCAS 06

White microfiber slip-on upper with moisture-wicking mesh lining
Lightweight soft toe and pull tab for easy wear
Dual-density Phoenix™ PU/PU sole for durability and comfort
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20347:2022 + A1:2024 **EU 35-48**

CYMRIC K01

White microfiber upper clogs with moisture-wicking mesh lining
Lightweight soft toe for comfort
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20347:2022 + A1:2024 **EU 35-48**

CYMRIC K02

White microfiber upper sandals with moisture-wicking mesh lining
Lightweight soft toe for comfort
Dual-density Oliver™ PU/PU sole for durability and cushioning
Available in PU/PU with TPU patch or PU/Rubber

EN ISO 20347:2022 + A1:2024 **EU 35-48**

CYMRIC K03

White microfiber upper slip-ons with moisture-wicking mesh lining
Lightweight soft toe for comfort
Dual-density Oliver™ PU/PU sole for durability and cushioning
Available in PU/PU with TPU patch or PU/Rubber

EN ISO 20347:2022 + A1:2024 **EU 35-48**

MIL26010

Beige suede upper with low-ankle design
200 J impact-resistant composite toe cap for safety
Dual-density Oliver PU/PU sole for durability
Provides reliable protection and support

EN ISO 20345:2022 + A1:2024 **EU 34-47**

CYMRIC J01

Black microfiber upper clogs with moisture-wicking mesh lining
Lightweight soft toe for all-day comfort
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20347:2022 + A1:2024 **EU 35-48**

CYMRIC J02

Black microfiber sandals with moisture-wicking lining
Lightweight soft toe for all-day comfort
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20347:2022 + A1:2024 **EU 35-48**

CYMRIC J03

Black microfiber upper slip-ons with moisture-wicking mesh lining
Lightweight soft toe for all-day comfort
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20347:2022 + A1:2024 **EU 35-48**

OCCUPATIONAL

MIL2602F

Non-DIN BSBP brown upper with mid-ankle metatarsal guard
200 J impact-resistant 522 steel toe cap for safety
Dual-density Griffin PU/PU sole for durability and grip
Provides reliable protection and support

Metatarsal Protection

Non Din Leather

Reliable Grip

Electrical Hazard proof

Impact resistant

Energy absorbent

Puncture resistant

Oil resistant

Slip resistant

Hydrocarbon resistant

Ladder grip

EN ISO 20345:2022 + A1:2024 EU 35-48

MALLARD 1

Waterproof crazy horse leather upper with moisture-wicking lining
200 J 522 steel toe with overnose and 1100 N plate
Dual-density Griffin™ PU/PU sole for durability and grip
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MALLARD 3

Waterproof nubuck leather upper with moisture-wicking textile lining
200 J impact-resistant 522 steel toe cap and 1100 N steel plate
Dual-density Griffin™ PU/PU sole for durability and grip
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MALLARD 5

Waterproof nubuck leather upper with moisture-wicking lining
200 J 522 steel toe with overnose & 1100 N plate
Dual-density Griffin™ PU/PU sole for durability and grip
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MALLARD 12

Waterproof crazy horse leather upper with lining
200 J impact-resistant 522 steel toe cap and 1100 N steel plate
Dual-density Griffin™ PU/PU sole for durability and grip
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

TACTICAL

MANUL 1

Suede leather upper for strength and style
Moisture-wicking 3D textile lining for all-day comfort
Soft toe for lightweight protection
EVA/Rubber Roc™ stuck-on sole for durability

EN ISO 20347:2022 + A1:2024 **EU 40-48**

MANUL 2

Suede leather upper for durability and style
Moisture-wicking 3D textile lining for comfort
Soft toe for lightweight protection
EVA/Rubber Roc™ stuck-on sole for lasting durability

EN ISO 20347:2022 + A1:2024 **EU 40-48**

MANUL 3

Smooth-finish leather upper for durability and style
Moisture-wicking 3D textile lining for all-day comfort
Soft toe for lightweight protection
Dual-density Oliver™ PU/Rubber sole for durability and support

EN ISO 20347:2022 + A1:2024 **EU 35-48**

MANUL 4

Heavy-duty printed leather upper for strength and style
Moisture-wicking 3D textile lining for lasting comfort
Soft toe for lightweight protection
Dual-density Oliver™ PU/Rubber sole for durability

EN ISO 20347:2022 + A1:2024 **EU 35-48**

MANUL 5

Camouflage textile upper for desert Flecktarn style
Moisture-wicking 3D textile lining for all-day comfort
Soft toe for lightweight protection
EVA/Rubber Roc™ stuck-on sole for durable wear

EN ISO 20347:2022 + A1:2024 **EU 40-48**

MANUL 6

Camouflage textile upper for navy boot style
Moisture-wicking 3D textile lining for lasting comfort
Soft toe for lightweight protection
EVA/Rubber Roc™ stuck-on sole for durable wear

EN ISO 20347:2022 + A1:2024 **EU 40-48**

MANUL 7

Beige suede leather upper for desert tactical style
Moisture-wicking 3D textile lining for all-day comfort
Plastic toe PU for lightweight protection
EVA/Rubber Roc™ stuck-on sole for durable wear

EN ISO 20347:2022 + A1:2024 **EU 40-48**

YODDHA

Ankle boot with PU foam laminated canvas upper
Synthetic lining for comfort
Garud sole with thermoplastic toe cap
Removable JV-94 PU foam footbed

EN ISO 20347:2022 + A1:2024 **EU 35-48**

BOLD

MIL2601R

Dark grey suede upper for strength and style

200 J impact-resistant composite toe cap for safety

High-ankle design for added support

Dual-density Cemented Roc™ EVA/Rubber sole for durability

Electrical Hazard proof

Impact resistant

Energy absorbent

Puncture resistant

Oil resistant

Slip resistant

Hydrocarbon resistant

Ladder grip

Composite Toecap

Grey Suede Upper

High Ankle

EN ISO 20345:2022 + A1:2024 EU 40-48

MIL2601D

Beige suede upper for strength and style
200 J impact-resistant steel toe cap for safety
High-ankle design for added support
Dual-density Darwin PU/PU sole for durability and protection

EN ISO 20345:2022 + A1:2024 **EU 35-47**

LYKOI

Waterproof crazy horse leather upper with 3D spacer high-ankle design
200 J fiberglass toe with 1100 N para-aramid insole
Dual-density Darwin™ PU/PU sole for durability and reliable protection
Also available in PU/PU with TPU patch and PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 34-46**

BARBET 02

Waterproof teal nubuck upper with 3D textile lining
200 J impact-resistant steel toe cap for safety
Moisture-wicking design for all-day comfort
EVA/Rubber Roc™ stuck-on sole for lightweight durability

EN ISO 20345:2022 + A1:2024 **EU 40-48**

MARBLE 01

Waterproof crazy horse leather upper with 3D spacer lining
200 J impact-resistant fiberglass toe cap for safety
1100 N puncture-resistant para-aramid insole
Durable dual-density Oliver PU/Rubber sole

EN ISO 20345:2022 + A1:2024 **EU 34-47**

BOLD

MALLARD 10

Waterproof crazy horse leather upper with moisture-wicking 3D Femina linin
200 J impact-resistant steel toe cap with overnose and 1100 N steel plate
Dual-density Griffin™ PU/Rubber sole for durability and grip
Also available in PU/PU with TPU patch and PU/PU variants

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MALLARD 11

Waterproof Viking Hydro leather upper with waterproof membrane lining
200 J impact-resistant steel toe cap with overnose and 1100 N steel plate
Dual-density Griffin™ PU/Rubber sole with bump cap for durability and grip
Also available in PU/PU with TPU patch and PU/PU variants

EN ISO 20345:2022 + A1:2024 **EU 35-48**

ALASKA

Waterproof BSBP leather upper with synthetic fur lining for warmth
200 J impact-resistant steel toe cap with overnose and 1100 N steel plate
Dual-density Oliver™ PU/Rubber sole with bump cap for durability and su
Also available in PU/PU with TPU patch or PU/PU variants

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MIL2601F

Dark grey nubuck upper with booty lining and high-ankle design
200 J impact-resistant steel toe cap for safety
Dual-density Griffin PU/PU sole for durability
Provides reliable protection and support

EN ISO 20345:2022 + A1:2024 **EU 35-48**

OCELOT

Waterproof suede & nubuck upper with moisture-wicking lining
200 J impact-resistant steel toe cap for safety
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber variants

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MARGAY

Suede and nubuck upper with moisture-wicking 3D mesh lining
200 J impact-resistant steel toe cap and 1100 N steel plate
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber variants

EN ISO 20345:2022 + A1:2024 **EU 35-48**

GUINA

Waterproof nubuck leather upper with moisture-wicking textile lining
200 J impact-resistant steel toe cap and 1100 N steel plate
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber variants

EN ISO 20345:2022 + A1:2024 **EU 35-48**

ONTILLA

Waterproof nubuck leather upper with moisture-wicking textile lining
200 J impact-resistant steel toe cap and 1100 N steel plate
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber variants

EN ISO 20345:2022 + A1:2024 **EU 35-48**

CEMENTED

MIL2601V

Dark green knitted upper for strength and style

200 J impact-resistant steel toe cap for safety

High-ankle design for added support

Dual-density Vibram PU/PU sole for durability and protection

Electrical Hazard proof

Impact resistant

Energy absorbent

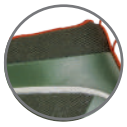
Puncture resistant

Oil resistant

Slip resistant

Hydrocarbon resistant

Ladder grip



High Ankle

First Lacing

TPU Fusing

EN ISO 20345:2022 + A1:2024 EU 34-47

LUPUS M03

Waterproof wheat nubuck upper with 3D spacer lining
200 J impact-resistant steel toe cap for safety
EVA/Rubber Michelin® sole for durability and lightweight support
Provides all-day comfort and protection

EN ISO 20345:2022 + A1:2024 **EU 34-47**

LUPUS M01

Synthetic suede upper with 3D spacer lining
200 J impact-resistant steel toe cap for safety
EVA/Rubber Michelin® sole for durable, lightweight support
Provides all-day comfort and protection

EN ISO 20345:2022 + A1:2024 **EU 34-47**

LUPUS M02

Flyknit and TPU patch upper with moisture-wicking 3D Femina lining
200 J impact-resistant steel toe cap for protection
EVA/Rubber Michelin® sole for durability and support
Provides superior comfort, protection, and performance

EN ISO 20345:2022 + A1:2024 **EU 34-47**

BARBET 06

Microfibre upper with 3D breathable lining
200 J impact-resistant steel toe cap for safety
EVA/Rubber Roc™ stuck-on sole for durability
Provides lasting comfort and reliable performance

EN ISO 20345:2022 + A1:2024 **EU 40-48**

BOOTS

VIK CLASSIC

Waterproof crazy horse leather upper with moisture-wicking 3D spacer lining
200 J impact-resistant steel toe cap with overnose and 1100 N steel plate
Dual-density Griffin™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber variants

EN ISO 20345:2022 + A1:2024 **EU 35-48**

VIK LITE

Waterproof crazy horse leather upper with 3D spacer lining
200 J steel toe cap and 1100 N puncture-resistant steel plate
Dual-density Oliver™ PU/PU sole for cushioning and durability
Also available in PU/PU with TPU patch or PU/Rubber options

EN ISO 20345:2022 + A1:2024 **EU 35-48**

VIK

Waterproof crazy horse leather upper with moisture-wicking 3D spacer lining
200 J impact-resistant steel toe cap and 1100N puncture-resistant steel plate
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber variants

EN ISO 20345:2022 + A1:2024 **EU 35-48**

DALFON J126

Black PVC thigh boot with 350 mm height and nylon fabric lining
Dual-density PVC outsole for durability and grip
Steel toe cap for impact protection
Provides reliable traction and comfort

EN ISO 20345:2022 + A1:2024 **EU 39-45**

DALFON J226

Black PVC thigh boot with 350 mm height and nylon lining
Dual-density PVC outsole for durability and grip
Steel toe cap for impact protection
Ensures reliable traction and comfort

EN ISO 20345:2022 + A1:2024 **EU 39-45**

DALFON J326

Black PVC thigh boot with 350 mm height and nylon lining
Dual-density PVC outsole for durability and traction
Steel toe cap for impact protection
Provides comfort and reliable performance

EN ISO 20345:2022 + A1:2024 **EU 39-45**

BOOTS

PANTHER 07

Waterproof printed leather upper with 3D spacer lining
200 J steel toe & 1100 N plate with metatarsal buckle
Dual-density Oliver™ PU/Rubber sole for durability and grip
Provides all-day comfort and reliable protection

Panther 08

EN ISO 20345:2022 + A1:2024 **EU 35-48**

SCAR W

Nubuck DIN beige leather ankle boot with scuff cap for protection
Removable EVA insocks for comfort and support
PU/PU Oliver sole for durability
Steel toe cap for impact protection

EN ISO 20345:2022 + A1:2024 **EU 35-48**

SCAR B

Nubuck DIN black leather ankle boot with scuff cap for protection
Removable polyester-laminated EVA insocks for comfort and support
PU/PU Oliver sole for durability
Steel toe cap for impact protection

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MIL2605P

Grey synthetic suede upper for strength and style
200 J impact-resistant 522 composite toe cap for safety
High-ankle design for added support
Double-density Phoenix™ PU/PU sole for durability and protection

EN ISO 20345:2022 + A1:2024 **EU 34-47**

MALLARD 15

Waterproof nubuck leather upper with moisture-wicking textile lining
200 J impact-resistant 522 steel toe cap and 1100N steel plate
Dual-density Griffin™ PU/PU sole for durability and grip
Also available in PU/PU with TPU patch or PU/Rubber options

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MALLARD 18 BROWN

Viking Hydro leather upper with moisture-wicking 3D mesh lining
200 J impact-resistant 522 steel toe cap for safety
1100 N puncture-resistant steel plate for protection
Griffin™ sole for durability and grip

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MALLARD 18 BLACK

Viking Hydro leather upper with moisture-wicking 3D mesh lining
200 J impact-resistant 522 steel toe cap for protection
1100 N puncture-resistant steel plate for safety
Griffin™ sole for durability and reliable grip

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MALKIN

Ankle boot with black Barton grain leather upper and Cambrelle lining
Direct-injected double-density PU sole for durability
Provides reliable protection
Comfortable and long-lasting design

EN ISO 20345:2022 + A1:2024 **EU 35-48**

BOOTS

INCAS 08

Waterproof teal nubuck upper with 3D textile lining
200 J fibreglass toe & 1100 N Kevlar
Dual-density Phoenix™ PU/PU sole for comfort and durability
Also available in PU/PU with TPU patch or PU/Rubber variants

EN ISO 20345:2022 + A1:2024 **EU 34-47**

INCAS 10

Lightweight fabric upper with 3D textile lining
200 J 522 steel toe & 1100 N plate
Dual-density Phoenix™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber variants

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MALLARD 04

Waterproof crazy horse upper with 3D textile high-ankle lining
200 J impact-resistant 522 steel toe cap and 1100 N steel plate
Dual-density Griffin™ PU/PU sole for durability and protection
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

PANTHER 02

Waterproof nubuck upper with 3D spacer lining
200 J steel toe & 1100 N plate insole
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

MALLARD 14

Waterproof full-grain upper with 3D textile lining
200 J 522 steel toe & 1100 N plate
Dual-density Griffin™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber variants

EN ISO 20345:2022 + A1:2024 **EU 35-48**

INCAS 14

High-ankle synthetic suede upper with 3D spacer lining
200 J impact-resistant 522 fiberglass toe cap for protection
1100 N puncture-resistant para-aramid insole for safety
Durable dual-density Phoenix™ PU/PU sole for grip and durability

EN ISO 20345:2022 + A1:2024 **EU 34-47**

MANX SUEDE

Suede leather upper with moisture-wicking textile lining for comfort
200 J impact-resistant steel toe cap for protection
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

CORNISH REX

Nubuck black leather upper with moisture-wicking lining
200 J impact-resistant steel toe cap for protection
Dual-density Oliver™ PU/PU sole for durability and cushioning
Also available in PU/PU with TPU patch or PU/Rubber

EN ISO 20345:2022 + A1:2024 **EU 35-48**

SOCKS & INSOCKS

SHORT LENGTH SOCKS

Frido-length socks made from 3-ply recycled cotton blend
Spandex and elastic yarn ensure a snug, secure fit
Padded terry sole with breathable mesh-knit upper
Mid-length elastic grip prevents slipping; sizes 23–35 cm

EN ISO 20345:2022 + A1:2024

LONG LENGTH SOCK

Crew-length socks made from 3-ply recycled cotton blend
Spandex and elastic yarn for a secure, comfortable fit
8” top elastic with double-spliced heel and toe for durability
Suitable for indoor and outdoor use; sizes 23–35 cm

EN ISO 20345:2022 + A1:2024

JV-94

Antibacterial, breathable, and lightweight construction
Shock absorption in heel and forefoot for comfort
Fully machine washable, removable, and replaceable
Moulded PU footbed for enhanced support

EN ISO 20345:2022 + A1:2024

M-04

Antibacterial, breathable, and lightweight design
Shock absorption in heel and forefoot for comfort
Fully machine washable, removable, and replaceable
Moulded EVA footbed for support and hygiene

EN ISO 20345:2022 + A1:2024

M-02

Antibacterial, breathable, and lightweight design
Shock absorption in heel and forefoot for comfort
Fully machine washable, removable, and replaceable
Moulded PU foam footbed for enhanced support

EN ISO 20345:2022 + A1:2024

M-05

Antibacterial, breathable, and lightweight design
Shock absorption in heel and forefoot for comfort
Fully machine washable, removable, and replaceable
PU footbed for enhanced support and hygiene

EN ISO 20345:2022 + A1:2024

M-06

Antibacterial, breathable, and lightweight design
Shock absorption in heel and forefoot for comfort
Fully machine washable, removable, and replaceable
Moulded EVA foam for cushioning and hygiene

EN ISO 20345:2022 + A1:2024

HEAD PROTECTION

Few injuries are more fatal or more damaging than head injuries. Concessions, brain injuries, permanent or temporary brain damage are just a few of the possible outcomes of a blow to the head. Additionally, workers who are exposed to potential electric shock need to protect against that as well. Basic Personal Protective Equipment required for any worker is the safety helmet.

A. TERMINOLOGY

Bump Cap - Head protection gear designed for protection against low clearance objects only. A bump cap is not to be used in lieu of a hard hat where a hard hat is required.

Cap style - Refers to a safety helmet that has a brim on the front of the helmet only.

Brim - The rim surrounding the shell.

Full Brim - Refers to a safety helmet that has a brim that wraps around the entire safety helmet, as compared to the cap style safety helmet where the brim is only in the front of the safety helmet.

BUMP CAP CUSTOMIZATION:

Four Point Suspension - Refers to the number of clips that connect the suspension to the inside of the safety helmet. Safety helmets usually come in a four-point or a six-point suspension.

Chin strap - An adjustable strap that fits under the chin to secure the helmet on the head.

Pin lock - Refers to the safety helmet suspension that adjusts to the head size by means of a set of holes on the one side of the strap and little pins that snap into the hols on the other side.

Ratchet - Refers to the safety helmet suspension that adjusts to the head size using a ratchet adjustment knob. Simple, easy and quick, this allows the safety helmet to be fit tight and comfortably.

Harness - The complete assembly by means of which the helmet is maintained in position on the head, which includes headband, cradle, etc.

Headband - Part of harness surrounding the head

Slots - Refers to the slot in the side of the safety helmet that is designed to accept accessories such as ear muffs, face shields or other safety helmets

Anti -concussion Tapes - Supporting straps which form the cradle

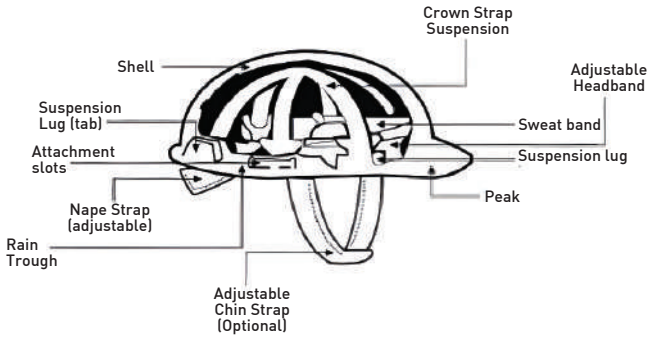
Cradle - The fixed or adjustable assembly comprising of anti-concussion tapes and nape strap, where provided.

Nape Strap - An adjustable (with respect to the shell) strap that fits behind the head to secure the helmet and may be an integral part of the helmet

Peak - The extension of the shell above the eyes.

Shell - The hard smoothly finished material that provides the general outer form of the helmet.

Ventilation Holes - Holes provided in the shell to permit circulation of air inside the helmet.



C.STANDARDS FOLLOWED
EN 397:2025

Descriptive Technical Information & Comparison

Protective helmets for industry

The EN 397:2025 standard is the latest revision of the European standard for industrial safety helmets, replacing EN 397:2012+A1:2012. It brings significant enhancements to the classification, testing methods, and optional performance requirements of safety helmets to reflect modern industrial risks and harmonize better with other PPE regulations.

- Key Structural Change: Introduction of Helmet Types
  One of the most important updates in EN 397:2025 is the classification of helmets into two types, which was absent in the 2012 version:
- Type 1 Helmets
  Designed to protect against vertical impacts (top of the head only), which is the traditional requirement.
- Type 2 Helmets
  Provide protection against both vertical and lateral (off-crown) impacts, including impacts to the sides, front, and rear of the helmet. These helmets are subject to stricter performance testing and must have a mandatory retention system (chin strap).
  Why it matters: Type 2 helmets are ideal for high-risk sectors like construction, mining, and logistics, where off-center impact risks are high.

Performance Testing – What's New?

1. Shock Absorption (Impact Protection)

- 2012 Version: Only required impact protection on the crown area using a 5 kg striker from 1 m (~49 J energy), tested at various temperatures (ambient, low, high).
- 2025 Version:
  - Type 1 helmets retain the same crown-only impact testing.
  - Type 2 helmets must pass additional off-crown impact tests, simulating front, side, and rear strikes.
  - Stricter control over drop velocity calibration, enhancing test repeatability across labs.
  - Type 2 helmets tested at higher energy levels (~98 J) for lateral impact protection.

2. Penetration Resistance

- 2012: A 3 kg conical striker dropped from 1 m on the crown area only.
- 2025: Applies to both helmet types; Type 2 also includes off-crown areas. Ensures broader resistance to falling/sharp objects.

3. Retention System (Chin Strap)

- 2012: Optional; if present, it must release between 150 N and 250 N to avoid strangulation.
- 2025:
  - Now mandatory for Type 2 helmets.
  - Requires minimum strap strength and controlled release, ensuring it holds in case of off-crown impacts while still preventing choking hazards.

4. Flame Resistance

- Retained in both versions: helmets must not continue to burn or drip molten material after 5 seconds of flame exposure.

5. Lateral Deformation (LD)

- Optional in both versions, but 2025 clarifies test methodology and acceptance limits.
- Useful in environments where side pressure is a risk (e.g., confined spaces, side loads).

Environmental & Electrical Enhancements

1. Electrostatic Properties (NEW in 2025)

- 2025 introduces an optional requirement for electrostatic discharge control, useful in environments with explosive gases, powders, or static-sensitive devices.
- Helmets must be made from materials that dissipate static charges safely.

2. High Visibility (NEW in 2025)

- An optional feature allowing helmets to be equipped with retro-reflective materials or high-visibility colors, improving safety in low-light or high-traffic areas.

3. Extreme Temperatures

- Both standards allow optional testing at:
  - Low temps: –20°C or –30°C
  - High temps: +150°C
- 2025 provides more defined procedures and marking requirements for these claims.

4. Electrical Insulation (440 V AC)

- Remains an optional feature for helmets used in proximity to low-voltage electrical hazards.
- No major change in test parameters, but 2025 improves documentation and test traceability.

5. Molten Metal Splash (MM)

- Optional in both versions.
- Helmets are tested to resist splashes of molten metal without igniting, melting, or dripping.

Marking & Labeling – Enhanced in EN 397:2025

EN 397:2025 strengthens labeling requirements for better traceability and user clarity. Markings must now include:

- Helmet Type (1 or 2)
- Manufacturer's name
- Size range
- Year and quarter of manufacture
- All optional performance features (e.g., LD, MM, ES, HV) with standardized pictograms

Why it matters: Clearer markings help users select the correct helmet for specific risks and ensure field-level compliance.

ANSI/ISEA Z89.1-2014 (R2019)

Revision of ANSI/ISEA Z89.1-2009. This standard establishes minimum performance and labelling requirements for protective helmets used in industrial and occupational settings under normal temperature conditions and optionally at high and low temperatures and when worn in the reversed position. It also includes requirements for high-visibility helmets and specifies test methods for evaluating all requirements.

Helmets conforming to the requirements of this standard are designated both by Type (based on location of impact force) and Class (based on electrical insulation) as well as any optional feature.

EN 397:2025 – Helmet Types & Specifications

Type / Class	Scope / Purpose	Mandatory Tests / Requirements	Optional / Additional Tests (if claimed)	Key Numerical Criteria / Notes
Type 1	Protection against on-crown (vertical) impacts (falling objects) only	• Shock absorption (vertical impact) • Penetration resistance (crown) • Flame resistance • Chin-strap anchorage (if fitted)	• Low temperature performance • High temperature performance • Molten metal splash (MM) • Electrical insulation (440 V) • Lateral deformation (LD)	• Transmitted force ≤ 5 kN under 49 J (5 kg × 1 m) drop • Penetration with 3 kg striker from 1 m — no contact with headform • Chin-strap anchorage release force between 150 N and 250 N • Flame exposure — helmet must self-extinguish (no continuous burning)
Type 2	Protection for vertical + off- crown (front / side / rear) impacts	All mandatory tests of Type 1 plus multi-directional shock absorption tests (front, side, rear impacts)	Same optional tests as above, if claimed	Introduced in EN 397:2025 to provide additional protection beyond crown impacts,aligning with multi-directional impact performance.

Table 1
Additional design and performance requirements for type 2 and 3 occupational protective helmets

Clause	Description	Hot work environments	Bushfire fighting
3.2.2	Brim	Type 2	Type 3
3.2.4	Shell conspicuity for special purposes	—	✓
3.3.5	Retaining strap for special purposes	—	✓
3.6.2 (d)	Ventilation - no holes or openings	—	✓
4.9.1	Very hot temperature requirement	✓	✓
4.9.2	Helmet shell materials flammability	✓	✓
4.9.3	Helmets for extermely high heat	—	✓
4.9.4	Resistance to ignition of associated materials	✓	✓

Electrical Resistance Test When helmets are tested in accordance with Appendix A, the leakage current shall not exceed 3 mA, and there shall be neither electrical discharge from the material nor flashover over the rim of the helmet. For underground mining applications, metal is acceptable as a means of securing the lamp bracket and cable clip. Helmets equipped with such accessories shall have metal items which penetrate the shell, suitably sealed and insulated.

EN 397 Stiffness (Lateral Deformation) Test: The helmet is subjected to a lateral compressive force of 430 N for 30 seconds to assess shell rigidity. The test verifies that lateral deformation does not exceed 40 mm, with residual deformation limited to 15 mm, ensuring structural stability under side loading

Shock Absorption Test When helmets are tested in accordance with Appendix C, the impact of 50 J shall not cause the deceleration of the striker to exceed 980 m/s2, or the force transmitted to the head form shall not exceed 5.0 kN for any of the set of three conditioned helmets.

Resistance To Penetration When helmets are tested in accordance with Appendix D, the point of the striker shall not make contact with the headform.

Thermal Performance Application of fire hazard assessment The results of the tests specified below shall not be used as the only criteria for the description or appraisal of the fire hazard of the material or product under actual fire conditions. In general, tests of this nature are considered unsuitable alone for use in regulations relating to safety control and consumer protection, but find use in research and development, quality control, and material specifications.

4.8.2 Flame resistance resistance to ignition of helmet shell When helmets that have been previously conditioned at 50°C and subjected to the shock absorption test prescribed in Clause 4.6 are tested in accordance with Paragraph E4 (Test 1) of Appendix E, the material of the shell shall not burn with the emission of flame after a period of 5 s has elapsed following removal of the flame.

EYE PROTECTION STANDARDS FOLLOWED

EN 166:2001 Personal eye-protection against various dangers

The EN 166/EN ISO 16321 (2022) standard is applicable to all types of personal eye protectors used against various dangers liable to damage the eye or to alter the vision, with the exception of radiation of nuclear origin, X rays, laser beams, infrared rays given out by sources at low temperatures.

The specifications of this standard are not applicable to eye protectors for which seperate and complete standards exist, such as anti-laser eye protector, all purpose solar spectacles, etc. The eye protectors fitted with corrective lenses are not exclused from the application field.

EN169: Ocular filters for welding and related techniques

The EN169 standard gives the grade numbers and the transmission specifications of the filters intended to ensure the protection of users carrying out welding, arc gauging and plasma arc cutting works.

The other requirements applicable for this type of filter are featured in the EN166 standard. The specifications for the welding filters with variable protection grade or double protection grade make the subject or the EN379 standard.

EN175 standard: Equipment for eye and face protection during welding and allied processes

The EN175 standard specifies the safety requirements and test methods relating to personal protective equipment used to protect the user's eyes and face against harmful optical radiation and against other specific risks due to usual welding processes, cutting or other related techniques.

The present standard specifies the protection, including ergonomic aspects, against different types of risks or dangers: radiation, flammability, mechanical risks, electrical risks. The equipment is designed to adjust protective filters with or without guard lenses or eyepiece of reinforcement, according to the recommendations of the protective equipment manufacturer for welding operations, in conformity with EN166 and EN169 standards or with EN379 standard.

APPLICATION CHART - TYPE OF THE GLASS

Standard symbol explanation

EN166	1	Optical class
EN166	F	Low energy impact
EN166	B	Medium energy impact
EN166	9	Non adherence of molten metal and resistance to penetration of hot solids
EN166	3	Protection against liquid droplets/splashes
EN166	8	Protection against short circuit electric arc
EN169	3	Filters for personal eyes-protection equipment used in welding and similar operations, scale number 3
EN169	5	Welding and braze welding of heavy metals. Welding with emitive fluxes (notably light alloys) oxygen cutting
EN169	8	Filters for personal eyes-protection equipment used in welding and similar operations. scale number 8
EN170	3-1	For use with sources which emit predominantly ultra violet radiation at wave lengths shorter than 313 mm and when glare is not an important factor. This covers the UVC and most of the UVB bands
EN171	4-5	Protection against infra red radiations. Typical application in terms of mean temperature sources up to 1390°C

EAR PROTECTION

Determining the need to provide hearing protection for employees can be challenging.

ASSESSMENT FACTORS

- The loudness of the noise as measured in decibels (dB)
- The duration of each employee's exposure to the noise
- Whether employees move between work areas with different noise levels
- Whether noise is generated from one or multiple sources

GLOSSARY

Decibel - dB

A unit used to measure the intensity of a sound or the power level of an electrical signal by comparing it with a given level on a logarithmic scale. In general use, it is a degree of loudness.

SNR - Single Number Rating

Is a rating system set up by the European Union (EU). Tests are conducted by independent testing laboratories with no direct participation by manufacturers. The independent testing laboratories meet all of the regulatory requirements as set by the EU. The test results serve as a guideline to indicate the amount of potential protection, a hearing protection device will give in a noisy environment. This was established by the European Union and is aligned with the EN standard in Europe.

NRR - Noise Reduction Rating

Is a rating system set up by the Environmental Protection Agency (EPA) as a guideline that indicates the amount of potential protection a hearing protection device will give in a noisy environment. It is aligned with American ANSI standard. All tests are performed in a controlled environment. Consequently, posted NRR ratings are a qualified example of how the individual products compare with other similar hearing protection products in an uncontrolled noise environment. Test results do not evaluate the product reusability, comfort, adaptability or quality.

STANDARDS FOLLOWED

EN352-1 Muffs and headband

This section of the standard deals with head fasteners and establishes requirements in terms of manufacture, design and performance, test methods, instructions relating to marking and information intended for users.

EN352-2 Plugs and bands

This part of the standard also deals with individually moulded ear plugs and devices connected by band, although, it does not deal with the performances of electronic devices likely to be inserted in the ear plugs or on the case of amplitude sensitive plugs.

EN352-3 Muffs and helmet mounted

The present section of the standard stipulates requirements in terms of manufacture, design and performance, test methods, instructions relating to head fastener marking and information intended for head fastener users, when the latter are fixed on protective industrial helmets.

FACE PROTECTION

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

ASSESSMENT FACTORS

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 etc.
- Identify the toxic product
- Locate and record its toxicity (concentration)
- Compare with the AVE/LVE

DUST AND AEROSOL FILTERS

Type	Code	Protection
P1	White	Protects from coarse solid particles without specific toxicity (calcium carbonate)
P2	Yellow	Protects from solid and/or liquid aerosols warned to be hazardous or irritating (silica, sodium carbonate)
P3	Red	Protects from toxic solid and/or liquid aerosols (beryllium-radioactive particles)

B. TERMINOLOGY

Dust - Solid particles suspended in the air.

Fumes - Small particles suspended in the air.

Aerosols and Aqueous Fogs - Small droplets produced during pulverization.

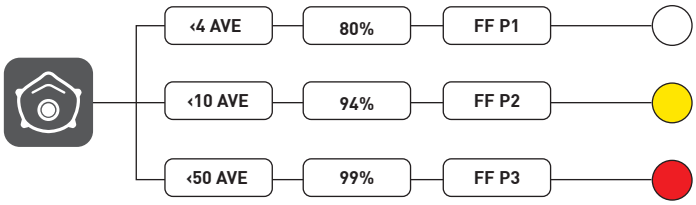
AVE (Average Value of Exposure) - It corresponds to the concentration measured over one reference period (one day of 8H for example). If the AVE exceeds the concentration to which an individual can be exposed without running any risk for his health, a protection is necessary. The AVE is indicated on the card of toxicity of the handled products.

LVE (Limit Value Exposure) - It is the measured concentration over a maximum time of 15 minutes that is advisable not to exceed.

CLASSIFICATION OF THE FILTERS

Class	FFP1	FFP2	FFP3
Minimum efficiency %	78%	92%	98%
Total inward leakage	22%	8%	2%
Filter efficiency of the filtering medium	80%	94%	99%
Nominal protection factor	4.5	12.5	50
Mean exposure value (MEV)	4X	10X	20X

FILTER EFFICIENCY



EN 136: Overall Masks

It contains laboratory tests and practical performance tests to check the conformity with resistance to temperature, impacts, flame, thermal radiation, traction, cleansers and disinfectants. Furthermore, the visual inspection must concern the marking and the manufacturer's information guide.

EN 140: Half masks and Quarter Masks

It contains laboratory tests and practical performance tests to check the conformity with resistance to impacts, cleaners, disinfectants, temperature, flame and respiratory resistance.

EN 143: Filters against particles

It contains laboratory tests to check the conformity with resistance to impacts, cleansers, disinfectants, temperature and flame. It also checks conformity with respiratory resistance.

EN 149: Filtering half masks

It contains laboratory tests to check the conformity with resistance to impacts, cleansers, disinfectants, temperature, flame. It also checks conformity with respiratory resistance.

EN 149:2001+A1:2009 – Respiratory Protective Devices

Title: Filtering half masks to protect against particles – Requirements, testing, marking

Purpose of the Standard

EN 149:2001+A1:2009 specifies minimum performance requirements for filtering half masks designed to protect the wearer against solid and liquid aerosols (particulates).

These are disposable respirators that cover the nose, mouth, and chin and rely on inhalation through filter media to block harmful particles.

Key Features of the Standard

- Applies to non-reusable (NR) and reusable (R) filtering half masks.
- Classifies masks into three protection levels: FFP1, FFP2, and FFP3.
- Includes testing methods for penetration, breathing resistance, flammability, clogging, and inward leakage.
- Covers design, labeling, and user information requirements.

Filtration Classes & Performance Requirements

Class Filter Efficiency Total Inward Leakage (TIL) Usage

FFP1 › 80% ‹ 22% Low levels of dust/nuisance

FFP2 › 94% ‹ 8% Moderate dust/mists/fibres

FFP3 › 99% ‹ 2% Toxic particles, viruses, asbestos

FFP2 is comparable to N95, and FFP3 to N99 in performance.

Protection Capabilities

Filtering half masks under EN 149 are tested to protect against:

- Solid particles (e.g., dust, metal fumes)
- Liquid aerosols (e.g., oil mist, chemical spray)
- Biological particles (e.g., viruses, bacteria — especially FFP2/FFP3)

EN 149 covers only particle protection, not gases/vapors (covered under EN 14387).

Key Technical Requirements & Tests

1. Filter Penetration Test
   - Performed with sodium chloride (NaCl) and paraffin oil (DOP).
   - Simulates real industrial aerosol exposure.
   - Ensures the filter can block hazardous particles.

2. Breathing Resistance
   - Inhalation and exhalation resistance must be low enough to avoid fatigue.
   - Maximum values (in mbar):

Flow Rate	FFP1	FFP2	FFP3
Inhalation @30 L/min	0.6	0.7	1.0
Inhalation @95 L/min	2.1	2.4	3.0
Exhalation @160 L/min	3.0	3.0	3.0

3. Total Inward Leakage (TIL)
   - Measures how much aerosol bypasses the filter (through edges or leaks).
   - Must remain below defined % (as shown above).

4. Flammability
- Mask must not continue to burn for more than 5 seconds after exposure to a flame.

5. CO_2 Content in Inhaled Air
- Must be below 1% inside the mask during use (for breathing comfort).

6. Clogging Test (optional)
- Simulates mask exposure to high-dust environments using dolomite dust.
- Masks that pass this test are marked with a "D" (e.g., FFP2 D).

Non-Reusable (NR) vs Reusable (R)

Code	Meaning	Typical Use Duration
NR	Non-reusable (single shift only)	↖ 8 hours
R	Reusable (multi-shift use allowed with proper cleaning)	Varies (typically 1–7 days)

Reusable masks must pass an additional cleaning and disinfection test.

Explanation:
- FFP2: Protection level
- NR or R: Non-reusable or reusable
- D: Passed clogging (dolomite) test
- CE XXXX: Certification from notified body (e.g., CE 0598 = BSI UK)

User Instructions Must Include:
- Fitting instructions with diagrams
- Warnings (e.g., facial hair reduces seal)
- Storage conditions (e.g., humidity and temperature)
- Expiry date
- Limitations of use (e.g., not for gases)

Amendment A1:2009 – What Was Updated?

The A1:2009 amendment made minor yet important changes:
- Expanded reusability classification (NR/R)
- Improved inward leakage procedures
- Added dolomite dust clogging test
- Better alignment with EU PPE Regulation (EU) 2016/425

The standard title remains EN 149:2001+A1:2009, showing the original release with the amendment.

MEDICAL FACE MASKS

EN 14683:2020

This European Standard specifies construction, design, performance requirements and test methods for medical face masks intended to limit the transmission of infective agents from staff to patients during surgical procedures and other medical settings with similar requirements. A medical face mask with an appropriate microbial barrier can also be effective in reducing the emission of infective agents from the nose and mouth of an asymptomatic carrier or a patient with clinical symptoms.

Materials and construction

The medical face mask is a medical device, composed of a filter layer that is placed, bonded, or moulded between layers of fabric. The medical face mask shall not disintegrate, split, or tear during intended use.

Design

The medical face mask shall have a means by which it can be fitted closely over the nose, mouth, and chin of the wearer and which ensures that the mask fits closely at the sides. Medical face masks may have different shapes and constructions as well as additional features such as a face shield (to protect the wearer against splashes and droplets) with or without anti-fog function, or a nose bridge (to enhance fit by conforming to the nose contours.

Bacterial Filtration Efficiency (BFE)

The Bacterial Filtration Efficiency test determines the filtration efficiency by comparing the bacterial control counts to test article effluent counts. The test is conducted using Staphylococcus aureus as the challenge organism. After the filtration media is preconditioned, a liquid suspension of S. aureus is aerosolized and delivered to the filtration media at a constant flow rate of 28.3 litres per minute (LPM) or 1 cubic foot per minute (CFM)

Breathability

Air permeability of the mask, measured by determining the difference of pressure across the mask under specific conditions of air flow, temperature, and humidity The differential pressure is an indicator of the "breathability" of the mask.

Splash resistance

Splash resistance is the ability of a medical face mask to withstand penetration of synthetic blood projected at a given pressure.

Microbial cleanliness (Bioburden)

Cleanliness means freedom from population of viable micro-organisms on a product and/or a package, and freedom from particles that are contaminating a material and can be released but are not generated by mechanical impact

Biocompatibility

The manufacturer shall complete the evaluation of the medical face mask according to EN ISO 10993-1 and determine the applicable toxicology testing regime.

PRODUCT DESCRIPTION

Nonsterile disposable 3-layered surgical mask

EN 14683:2019+AC:2019 – Medical Face Masks
Full Title:
Medical face masks – Requirements and test methods
Purpose of EN 14683
- The EN 14683 standard specifies performance requirements and testing methods for medical face masks intended to:
- Limit the transmission of infectious agents from medical staff to patients (and vice versa),
- Protect wearers from splashes, droplets, and aerosols of potentially infectious material.

Medical masks under this standard are primarily used in operating theatres, clinical settings, and general patient care.

Mask Classification under EN 14683
EN 14683 classifies masks into Type I, Type II, and Type IIR, based on Bacterial Filtration Efficiency (BFE), breathability, and splash resistance.

Mask Type	BFE (%)	Splash Resistance	Intended Use
Type I	↗ 95%	No	For patients, not for healthcare professionals
Type II	↗ 98%	No	For medical personnel in dry environments
Type IIR	↗ 98%	Yes	For high-risk, fluid-intensive medical use

Key Performance Requirements

Test Parameter	Requirement
Bacterial Filtration Efficiency (BFE)	≥ 95% for Type I ≥ 98% for Type II & IIR
Differential Pressure (Breathability)	< 40 Pa/cm² for Type I & II < 60 Pa/cm² for Type IIR
Splash Resistance Pressure	≥ 16.0 kPa (only required for Type IIR)
Microbial Cleanliness (Bioburden)	≤ 30 CFU/g

1. Bacterial Filtration Efficiency (BFE) – EN 14683 Annex B

- Tested using aerosolized Staphylococcus aureus.
- Measures the mask's efficiency in filtering bacteria-sized particles (3.0 µm).

2. Differential Pressure (ΔP) – EN 14683 Annex C

- Indicates breathability.
- Lower ΔP = Easier to breathe through.
- Type IIR masks are allowed slightly higher resistance due to added fluid barrier.

3. Splash Resistance (Synthetic Blood Test) – ISO 22609

- Simulates exposure to blood or bodily fluid splashes.
- Fluid is sprayed at 16.0 kPa (120 mmHg) pressure.
- Only Type IIR masks must pass this test.

4. Microbial Cleanliness (Bioburden) – EN ISO 11737-1

- Assesses hygiene during production and packaging.
- Microbial load must be ↖ 30 colony-forming units (CFU) per gram of mask.

Mask Marking Requirements

Medical face masks must be clearly labeled with:

- Manufacturer name and address
- Product type (e.g., Type IIR)
- Standard reference: EN 14683:2019+AC:2019
- Intended use and disposal instructions
- CE marking with notified body number (if applicable)

Note: For masks classified as Class I Medical Devices, CE marking is self-certified under the EU Medical Device Regulation (MDR 2017/745). However, Type IIR masks with splash resistance may also need third-party review for specific markets.

EN 14683 vs Other Mask Standards

Feature	EN 14683 (EU)	ASTM F2100 (USA)	YY 0469 (China)
Primary Use	Medical/surgical masks	Medical/surgical masks	Medical masks
Key Classes	Type I, II, IIR	Level 1, 2, 3	Standard masks
BFE Requirement	≥95%, ≥98%	≥95%, ≥98%, ≥98%	≥95%, ≥98%
Fluid Resistance	Only Type IIR	Level 2 & 3	Yes
Breathability	≤40 or ≤60 Pa/cm²	<5 mm H_2O/cm²	<49 Pa/cm²

Use Cases by Mask Type

Type

Recommended Setting

Type I

For patients or public in pandemic situations (not for surgical staff)

Type II

For medical staff in low-fluid environments

Type IIR

For surgical or high-exposure environments with splash risk

Limitations of EN 14683 Masks

- Not designed for respiratory protection against airborne particles.
- Does not offer tight face seal like N95, FFP2/FFP3 masks.
- Not tested for filtration of sub-micron aerosols (e.g., 0.3 µm).

For airborne pathogens like tuberculosis or COVID-19, respirators (EN 149/N95) are preferred.

PERFORMANCE REQUIREMENTS FOR SURGICAL MASKS

Performance Parameter	Type I	Type II	Type III
Bacterial Filtration Efficiency (BFE), %	↗ 95%	↗ 98%	↗ 98%
Differential Pressure (ΔP), Pa/cm²	← 40	← 40	← 60
Microbial Cleanliness (Bioburden), CFU/g	↖ 30	↖ 30	↖ 30
Splash Resistance	Not required	Not required	↗ 16.0 kPa
Intended Use	General public / patients	Medical staff	Medical staff with fluid exposure risk

Type I medical face masks should only be used for patients and other persons to reduce the risk of spread of infections particularly in epidemic or pandemic situations. Type I masks are not intended for use by healthcare professionals in an operating room or in other medical settings with similar requirements.

HAND PROTECTION

Because of their tremendous versatility, hands are exposed and susceptible to many types of injuries. The common hazards against which hand protection needs to be routinely considered are mechanical hazards like :

a. Cutting
b. Punctures
c. Crushing
d. Pinches
e. Rotating equipment
f. Vibrating equipment

A. Environmental Hazards

a. Extreme temperatures
b. Electrical hazards

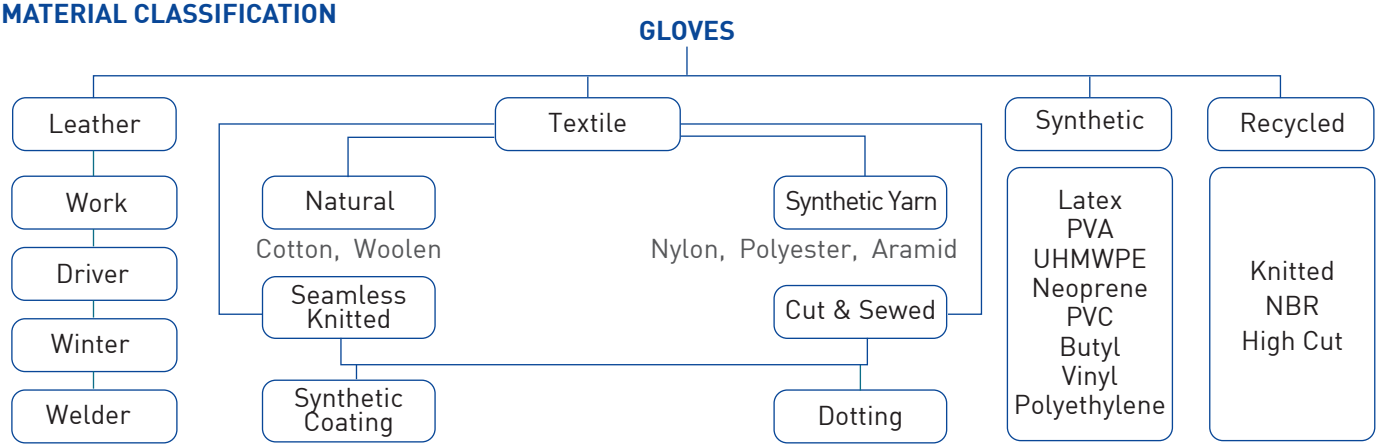
B. Contact with skin irritant substances

ASSESSMENT FACTORS

The need for hand protection should be assessed by conducting an assessment of potential workplace hazards. There are four interconnected factors to consider when selecting the best form of hand protection for the intended work.

a) The type of hazard (physical, mechanical, chemical, biological)
b) The nature of the task (regular process or incidental/ accidental)
c) User comfort (fit, dexterity) and
d) The workplace conditions (surface / ambient temperatures, wet/dry)

MATERIAL CLASSIFICATION



For a given weight, Kevlar is five times more resistant than steel. Twaron% is the para-aramid fibre from AKZO Nobel Para aramid %/Twaron% fibre gloves are 3 times more resistant to cuts than cotton gloves and 5 times more resistant than leather gloves. They have the following characteristics:

- Burns between 425°C and 475°C without melting
- Self-extinguishing (cannot burn without outside addition of fuel)
- Good chemical stability
- Soft to touch, comfortable, washable, good dexterity

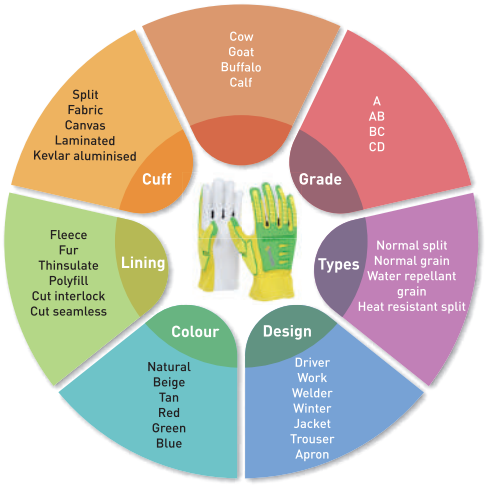
SUPPORTED GLOVES

Our technical seamless gloves are manufactured using fully automated machines, in our fully acclimatized production floors. The nitrile gloves plant manufactures heavy, medium and light dipped gloves, both in string knit as well as cut and sewn liners. Our production unit has knitting machines of 7, 10, 13, 15, 18 & 21 gauge and in pile construction. Keeping in mind the end users from various cross-sections of industries our units are equipped with machinery to knit from finer to coarser gauge products. We have a fully automated dipping process and the NBR is sourced from world famous manufacturers. Nitrile gloves are best when there is a need for greater in applications requiring mild chemical protection, cut resistance or a disposable glove solution.

LEATHER GLOVES

Leather Gloves are best for protection from rough objects, sparks and heat and in heavy-duty work requirements. All kinds of leather provide comfort, durability, dexterity, and mild heat resistance and abrasion protection. These advantages make leather a traditional favourite for industrial workers.

Humidity controlled shop-floor facilitates better handling and delivery of leather gloves. The cutting and sewing machines, which are of European make are ultra modern with a high reputation. Our strength lies in being able to manufacture very high-quality gloves using a combination of leather, Para -aramid fabrics and liners. Having our own tannery gives us the advantage of producing leather conforming to international norms



- Double stitching on all gloves with different pattern to five better appearance and tough stitching.
- Keystone thumb, Straight Thumb and wing thumb is possible.

STANDARDS FOLLOWED

Protective gloves can be divided into 3 categories depending on type and which risk or danger the gloves should protect against.

Category 1: Gloves of simple design, for minimal risks only. Example of gloves in this category are house-hold gloves used for cleaning and for protection against warm objects or temperatures not exceeding +50° C. Additional gloves in this category can include light-duty gardening gloves or other work where the risk for injury is minimal.

Category 2: Gloves of intermediate design, for intermediate risks. Gloves are placed in this category when the risk is not classified as minimal or irreversible. The gloves must be subjected to independent testing and certification by a Notified Body, whom then issues a CE marking showing the gloves protective capacities. In this category, you will find general handling gloves requiring good puncture and abrasion performance according to EN 388.

Category 3: Gloves of complex design, for irreversible or mortal risks. Gloves in this category are designed to protect against the highest levels of risk e.g. highly corrosive acids. Gloves in this category must also be independently tested and certified by a Notified Body (approved by the EU commission).

EN 21420 - General Requirement

This standard defines the general requirements for glove design and construction, innocuousness, comfort and efficiency, marking and information applicable to all protective gloves, PAHS and arm protection.

Glove Construction and Design

- Gloves have to offer the greatest possible degree of protection in the foreseeable conditions of end use
- When seams are included, the strength of these seams should not reduce the overall performance of the glove.

Innocuousness

- The gloves themselves shouldn't cause any harm to the user
- pH of the glove should be between 3.5 and 9.5
- Chromium (VI) content should be below detection (less than 3 ppm)

ABRASION RESISTANCE

Abrasion resistance is evaluated using a Taber abrasion test (ASTM D3389) with an applied load of 500 g per abrasive wheel. The glove material is subjected to continuous rubbing under this constant load. Performance levels are determined by the number of abrasion cycles completed before failure.

Higher abrasion levels indicate greater durability and longer service life under abrasive conditions.

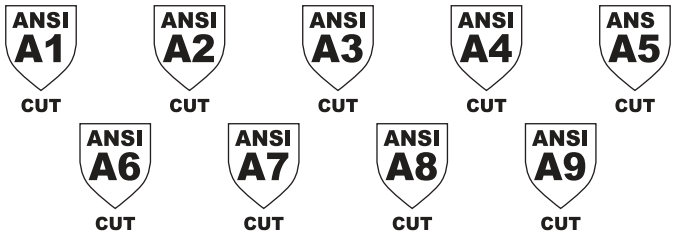
Abrasion Level	Cycles to Failure	Applied Load	Performance Description
Level 0	← 100 cycles	500 g per wheel	Minimal abrasion resistance
Level 1	↗ 100 cycles	500 g per wheel	Low abrasion resistance
Level 2	↗ 500 cycles	500 g per wheel	Light abrasion resistance
Level 3	↗ 1,000 cycles	500 g per wheel	Moderate abrasion resistance
Level 4	↗ 3,000 cycles	500 g per wheel	Good abrasion resistance
Level 5	↗ 10,000 cycles	500 g per wheel	High abrasion resistance
Level 6	↗ 20,000 cycles	500 g per wheel	Very high abrasion resistance

CUT RESISTANCE

When assessing cut resistance in gloves it can be good to understand both European and American cut resistance classification systems as many gloves will show both markings.

In US, the ANS/ISEA 105 standard include a cut resistance test with a scale with 9 levels of cut protection, A1-A9. The levels indicate how many grams required to cut through a sample using a rectangular blade in the specified cut test machine.

ANSI cut level	Load required to cut (grams of force)	Application Examples
A1	200-499 g	Light duty, paper handling
A2	500-999 g	General assembly, small parts
A3	1,000-1,499 g	Light metal stamping, small glass handling
A4	1,500-2,199 g	Sheet metal handling, moderate cut risks
A5	2,200-2,900 g	Heavy glass, metal fabrication, sharp meterials
A6	3,000-3,999 g	Sharp steel, high-risk environments
A7	4,000-4,999 g	Extreme cut hazards, heavy blaeds
A8	5,000-5,999 g	Industrial cutting, heavy mechinery work
A9	6,000+g	Maxmimum protection, ultra sharp risks



IMPACT RESISTANCE

There are two global standards when selecting an impact glove: EN 388 and ANSI/ISEA 138. Both standards have similar test methods where a weight is dropped on the impact areas with an energy of 5 joule. What differs is the scoring and rating system.

The American standard sets requirements of gloves designed to protect the knuckles and fingers from impact forces. The impact resistance is classified in 3 levels (1-3) where level 1 has the lowest protection and level 3 has the highest protection. Areas tested are knuckles at back of hand, fingers, and the thumb. The lowest performance value sets the overall protection leve.

Performance Level	Mean (KN)	All Impacts (KN)
1	<9.0	<11.3
2	<6.5	<8.1
3	<4.0	<5.0

ANSI / ISEA 138 **ANSI / ISEA 138** **ANSI / ISEA 138**

EN 388:2016+A1:2018

Gloves giving protection from mechanical risks Protection against mechanical hazards is expressed by a pictogram followed by four numbers (performance levels), each representing test performance against a specific hazard.

1 Resistance to abrasion

Based on the number of cycles required to abrade through the sample glove (abrasion by sandpaper under a stipulated pressure). The protection factor is then indicated on a scale from 1 to 4 depending on how many revolutions are required to make a hole in the material. The higher the number, the better the glove.

2 Circular Blade cut resistance (Coup Test)

Based on the number of cycles required to cut through the sample at a constant speed. The protection factor is then indicated on a scale from 1 to 4.

3 Tear resistance

Based on the amount of force required to tear the sample. The protection factor is then indicated on a scale from 1 to 4.

4 Puncture resistance

Based on the amount of force required to pierce the sample with a standardly sized point. The protection factor is then indicated on a scale from 1 to 4.

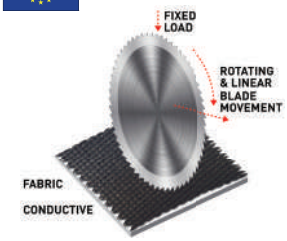
5 Straight Cut Resistance (TDM -100 Test)

Based on the average load required to achieve a cut using a straight blade. The protection factor is then indicated on a scale from A to F.

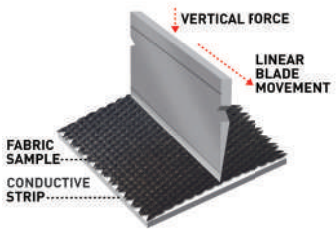
6 Impact Resistance

An optional test based on the mean transmitted force which is intended for gloves designed for protection against impact. Gloves that do not offer impact protection will not be subjected to this test. For that reason, there are three potential ratings that will be given, based on this test. P (Pass), F (Fail}, and X (Not tested)

COUP TEST



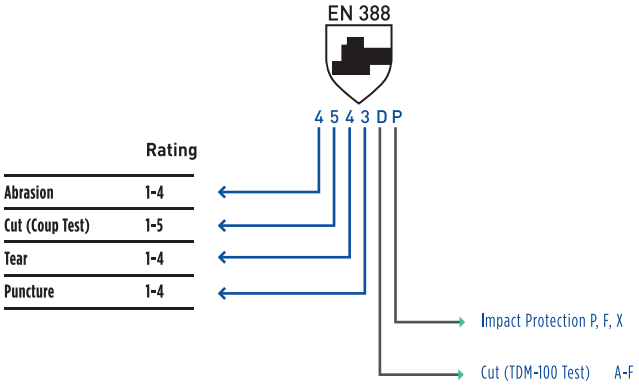
TDM-100 TEST



TEST	Performance				
	1	2	3	4	5
Abrasion Resistance (Cycles)	100	500	2000	8000	-
Blade cut Resistance (Factor)	1.2	2.5	5	10	20
Tear Resistance (Factor)	10	25	50	75	-
Puncture Resistance (Newton)	20	60	100	150	-

Perroamance Level	Blade cut Resistance (N)	Typical Applications
A	2-5 N	Light duty, tasks (e.g. general handling, werehouse work)
B	5-10 N	Medium-risk tasks (e.g. packaging, light assembly work)
C	10-15 N	Handling materials with moderate cut risks (e.g., metal stamping, automotive assembly)
D	15-22 N	High-risk environments (e.g., glass handling metal sheet cutting)
E	22-30 N	Heavy-duty protection (e.g., steel wire handling, sharp metal work).
F	30 N	Extreme cut risk (e.g., butchering, high-risk industrial tasks)

Impact Resistant Test with Standard 13594:2015		
Parameter	Value / Requirement	Notes
Mean Transmitted Force (Level 1)	↖ 7.0 kN	Gloves must attenuate force averaged over multiple tests
Single Peak Force (Level 1)	↖ 9.0 kN	No single impact should exceed this peak



a Resistance to flammability 0-4
b Contact heat resistance 0-4
c Convective heat resistance 0-4
d Radiant heat resistance 0-4
e Resistance to small splashes of molten metal 0-4
f Resistance to large splashes of molten metal 0-4

EN407 - Heat Protection

PERFORMANCE LEVELS	1	2	3	4
A. Burning behaviour (after flame & after glow time)	20s no requir.	<10s <120 s	<3s <25s	<2s <5s
B. Contact heat (cont. temp. & threshould time)	100°C >15s	250°C > 15s	350°C > 15s	500°C > 15s
C. Canvective heat (heat transafer delay)	>4s	>7s	>10s	>18s
D. Radiant heat (heat transfer delay)	>7s	>20s	>50s	>95s
E. Small drops molten mela (#drops)	>10	>15s	>25	>35
F. Large quantity molten metal (mass)	30g	60g	120g	200g

EN 374 - Gloves giving protection from dangerous chemicals and micro-organism Chemical protective gloves must meet the requirements of the European standard EN 374. This standard has now been modified substantially. Gloves with long cuffs greater or equal to 400mm are also to be tested with samples taken at 80 mm from the end of cuff

EN ISO 374-1:2016 - Terminology and performance requirements for chemical risks

NEW	OLD
EN ISO 374-1:2016	EN 374-1:2003
"Protective gloves against dangerous chemicals and micro-organisms"	"Protective gloves against chemicals and micro-organisms"
Removal of reference to micro-organisms in the text (see new part 5)	Assumption of protection against micro-organisms
Number of test chemicals increased from 12 to 18	12 test chemicals
Beaker no longer used	Beaker for "waterproof protective gloves with limited protection against chemical dangers"
Gloves classified as type A, B or C	
Change of labelling on the product: pictogram of conical flask with differing number of letters for test chemicals per type	Pictogram of conical flask with at least 3 letters for test chemicals

3 specimens taken from the palm are tested for breakthrough times and the lowest is the result; the performance level is correlated with the breakthrough timetable. It is based on three test methods:

- Penetration test in accordance with standard EN 374-2: 2014
- Permeation test in accordance with standard EN 16523-1: 2015 which replaces standard EN 374-3
- Degradation test in accordance with standard EN 374-4: 2013

Type A: Protective glove with permeation resistance of at least 30 minutes each for at least 6 test chemicals.
Type B: Protective glove with permeation resistance of at least 30 minutes each for at least 3 test chemicals.
Type C: Protective glove with permeation resistance of at least 10 minutes for at least 1 test chemical.

NEW			OLD	
ISO 374-1-2016	ISO 374-1-2016/Type B	ISO 374-1-2016/Type C	EN 374:2003	EN 374:2003
JKLMNO	JKL	K	AKL	

The chemical permeation table now includes 6 new categories labelled M through T.

LIST OF HAZARDOUS COMPOUNDS			
CODE	CHEMICAL	CAS NUMBER	CLASS
A	Methanol	67-56-1	Primary Alcohol
B	Acetone	67-64-1	Ketone
C	Acetonitrile	75-05-8	Nitrile composite
D	Dichloromethane	75-09-2	Chlorinated hydrocarbon
E	Carbon disulphide	75-15-0	Organic compound containing sulphur
F	Toluene	108-88-3	Aromatic hydrocarbon
G	Diethylamine	109-89-7	Amine
H	Tetrahydrofuranne	109-99-9	Heterocyclic ether compound
	Ethyl acetate	141-78-6	Ester
J	n-Heptane	142-82-5	Saturated hydrocarbon
K	sodium hydroxide 40%	1310-73-2	Inorganic base
L	sulphuric acid 96%	7664-93-9	Inorganic mineral acid, oxidising
M	nitric acid 65%	7697-37-2	Inorganic mineral acid,oxidising
N	acetic acid 99%	64-19-7	Organic acid
O	ammonia 25%	1336-21-6	Organic base
P	hydrogen peroxide 30%	7722-84-1	Peroxide
S	hydrofluoric acid 40%	7664-39-3	Inorganic mineral acid
T	formaldehyde 37%	50-00-0	Aldehyda

EN 374-2:2014 -Determination of resistance to penetration. There are no significant changes.

EN 374-3:2003 - Determination of resistance to permeation by chemicals. This standard has been removed and replaced by EN 16523-1:2015, Determination of material resistance to permeation by chemicals — Part 1: Permeation by liquid chemical under conditions of continuous contact, in the Official Journal after harmonisation. There is no significant effect on the test method.

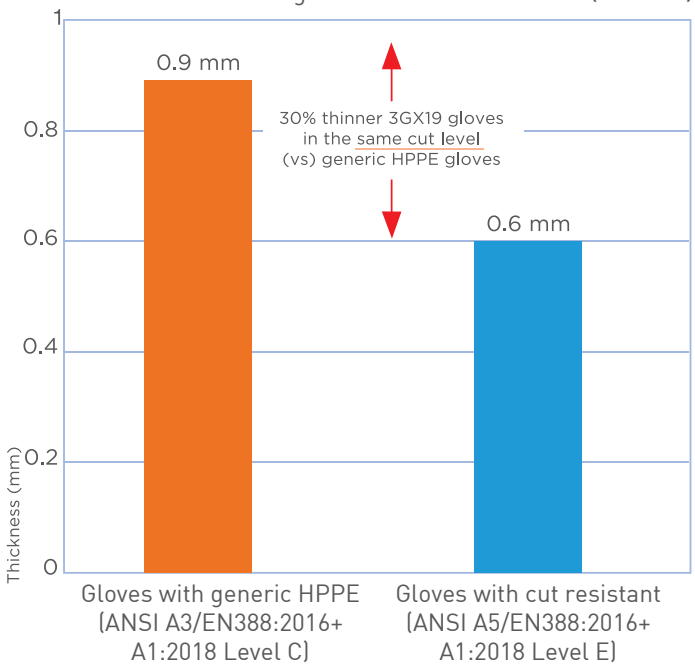
EN 374-4:2013 - Determination of resistance to degradation by chemicals. This part is new and takes into account the effect of degradation (change of glove material) by the chemical. Degradation can cause brittleness, swelling or shrinkage of the polymer material, for example. This is equivalent to a changing barrier function against the chemical. To be able to claim protection against a chemical of the list, permeation and from now degradation tests must be carried out. The results of the degradation test must appear in the information leaflet.

EN ISO 374-5:2015 - Terminology and performance requirements for micro-organisms risks. This standard is expected to become effective in 2017. It should be observed in particular for the risks of contact with micro-organisms (bacteria/viruses)

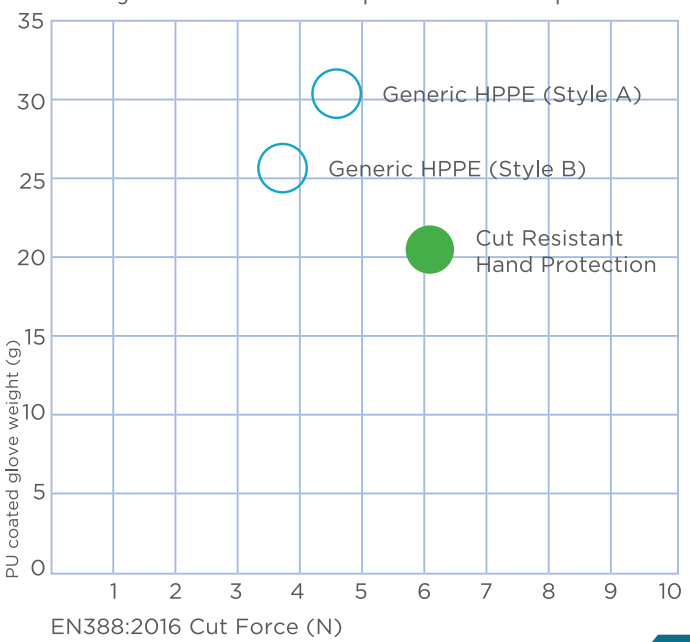
EN 511-2006 - This standard applies to any glove to protect the hands against convective and contact cold until the temperature goes down to - 50°C. The 'cold hazard' pictogram is accompanied by a 3 - digit number:

a. Resistance to convective cold (0-4)
b. Resistance to contact cold (0-4)
c. Permeability by water (0 or 1)

Thickness comparison between 13 gauge generic PE gloves and gloves with cut resistant hand protection fiber with similar range of cut resistance level B (ANSI A2)



Standard 13 gauge or 15 gauge PU coated glove weight and cut resistance performance comparison



BODY PROTECTION

EN ISO 11611:2015 specifies minimum basic safety requirements and test methods for protective clothing including hoods, aprons, sleeves and gaiters that are designed to protect the wearer's body including head (hoods) and feet (gaiters) and that are to be worn during welding and allied processes with comparable risks such as spatter (small splashes of molten metal), short contact time with flame, radiant heat from the arc, and minimizes the possibility of electrical shock by short-term, accidental contact with live electrical conductors at voltages up to approximately 100 V dc. ISO 11611:2007 does not cover requirements for hand protection.

EN ISO 11611:2024

This standard specifies minimum performance requirements and test methods for protective clothing used in welding and allied processes, protecting the wearer against:

- Small splashes of molten metal
- Short contact with flame
- Radiant heat from the arc
- UV radiation
- Risk of electric shock from accidental contact with live parts (~100 V DC)

Performance Classes

Class	Protection Level	Use Case
Class 1	Lower protection	Light-duty welding, low spatter, low radiant heat
Class 2	Higher protection	Heavy-duty welding, higher risk of spatter and radiant heat

Test Requirements (EN ISO 11611:2024)

Property Tested	Test Method	Requirements
Flame spread (A1: surface / A2: edge)	ISO 15025	No hole, no flaming debris, after-flame ≤ 2 s
Molten metal splash resistance	ISO 9150	Class 1: ≥15 drops Class 2: ≥25 drops
Radiant heat resistance (RHTI 24)	ISO 6942 (Method B)	Class 1: ≥ 7 s Class 2: ≥ 16 s
Tensile strength	ISO 13934-1	≥ 400 N (woven fabrics)
Tear strength	ISO 13937-2	≥ 15 N
Seam strength	ISO 13935-2	≥ 225 N
Dimensional stability (laundering)	ISO 5077 / ISO 6330	≤ ±3%
UV radiation transmission	Annex F (new)	Classified in 3 risk categories based on Seff(λ)
Electrical resistance	ISO 1149-2	≥ 1×10^5 Ω
Contact heat (optional)	ISO 12127-1	As required by application
Design Safety	Clause 5	Overlap zones, no exposed metal, flap-covered pockets

Marking Requirements

Each garment must be marked with:

- Standard number: EN ISO 11611:2024
- Protection class (e.g., Class 1 A1 or Class 2 A1+A2)
- Pictogram (welder icon)
- Manufacturer details, size, care symbols, and cleaning instructions

EN ISO 11612:2015 - Requirements for Fabric & Materials for Protective Clothing for Heat and Flame

ISO 11612:2015 specifies performance requirements for protective clothing made from flexible materials, which are designed to protect the wearer's body, except the hands, from heat and/or flame. For protection of the wearer's head and feet, the only items of protective clothing falling within the scope of ISO 11612:2015 are gaiters, hoods, and over boots.

The following types of protection, their letter code, and number codes means in EN ISO 11612:

EN 11612-A Flame Spreading

EN 11612-A is a test to determine the fire resistance of textiles and materials used in clothing, upholstery, and other products. Fabric and seams are flamed for 10 seconds during this test. As a result, the after-lamp time, afterglow time, and hole formation must remain within the values of the set standard.

Tests can be conducted in two ways:

- The mean value of after flame time shall be ≤2 for A2 & A1 is ←10 sec
- The mean value of afterglow time shall be s ≤2 for A2 & A1 is ←10 sec

EN 11612-B Convective Heat Resistance Test

In this test, the material is exposed to flames. The temperature rise at the top is measured by means of a calorimeter. It determines how much time (s) it takes to reach 24°C. As a result, the class is determined as follows:

- B1: from 4 to 10 seconds,
- B2: from 10 to 20 seconds,
- B3: 20 seconds and more

EN 11612-C Radiant heat

The test method consists of exposing the material to radiant heat by means of infrared. A calorimeter measures the temperature rise on the other side of the fabric. It measures how long it takes to reach a temperature rise of 24°C. Based on this, the class is determined:

- C1: 7 ← 20 seconds,
- C2: 20 ← 50 seconds,
- C3: 50 ← 95 seconds,
- C4: 95 seconds and longer

EN 11612D / E Molten Metal

In this test, molten metal splashes are measured for protection. On the back of the fabric is a membrane that simulates human skin. After this, aluminum molten (Code D) and iron molten (Code E) are applied. It

is possible that the membrane on the back of the fabric will not deform. The maximum allowable weight for splashes of molten metal is indicated in the following table:

- D1: between 100 grams and 200 grams
- D2: between 200 grams and 350 grams
- D3: 350 grams and more
- E1: between 60 grams and 120 grams
- E2: between 120 grams and 200 grams
- E3: 200 grams and more

EN 11612-F Contact Heat The EN 11612-F test measures the protection of fabric against contact heat via clothing. In the test, the substance is brought into contact with a test object at 250 °C, and the time at which the heat reaches the back of the fabric is measured. Based on the measured threshold time, the achieved class is determined as follows:

- F1: 5 ← 10 seconds,
- F2: 10 ← 15 seconds,
- F3: 15 seconds and longer

NFPA 2112:2023- Standard on Flame-Resistant Clothing for Protection of Industrial Personnel Against Short-Duration Thermal Exposures from Fire

This standard shall provide minimum requirements for the design, construction, evaluation, and certification of flame-resistant garments, shrouds / hoods / balaclavas, and gloves, and cloth face coverings for use by industrial personnel, with the intent of not contributing to the burn injury of the wearer, providing a degree of protection to the wearer, and reducing the severity of burn injuries resulting during egress from or accidental exposure to short-duration thermal exposure from fire.

ASTM D7138 (thread melting resistance): Thread used in garments must be of flame-resistant fiber and not melt at 500°F.

ASTM D6413 (vertical flame resistance): When exposed to flame for 12 seconds, garment fabrics must:

- Self-extinguish (after flame) in 2 seconds or less
- Exhibit damage (char length) of 4 inches or less
- No melting or dripping can occur
- Fabric must meet these standards after 100 industrial laundering cycles.

ASTM F2894 (heat resistance): When exposed to 500°F for 5 minutes, garment fabrics must:

- Not ignite, melt, drip, or separate
- Not shrink more than 10%

ASTM F2700 (heat transfer performance): When exposed to combined convective and radiant heat at 2.0 cal/cm2/sec, garment fabrics must have a HTP rating of 3.0 cal/cm2 or greater (contact) and 6.0 cal/cm2 or greater (spaced)

ASTM F1930 (instrument manikin test): under simulated flash fire condition, predicted 2nd and 3rd degree total body injury is no more than 50% of total body surface area covered by sensors (less head, hands, and feet).

Label Print Durability Test: garment labels must remain legible and in place after 100 industrial laundering cycles.

Employees who face possible body injury of any kind that cannot be eliminated through engineering, work practice or administrative controls, are adviced to wear appropriate body protection suits while performing their tasks.

7 WAYS OF LOGO/LABELLING:

Testing details on STANDARD EN 343

EN343 testing methods

EN 343:2019 – Protective Clothing Against Rain

EN 343:2019 is the European standard that specifies the requirements and test methods for protective clothing designed to provide protection against precipitation (rain, snow), fog, and ground humidity. It replaces the earlier version EN 343:2003+A1:2007 and introduces clearer performance criteria and testing updates, especially for breathability and waterproofing.

Scope of EN 343:2019

EN 343 covers jackets, trousers, coveralls, and other rainwear used in outdoor work environments such as:

- Construction
- Transportation
- Forestry
- Road maintenance
- Agriculture
- Utilities

It assesses garments based on two primary performance parameters:

1. Water Penetration Resistance (waterproofness)
2. Water Vapour Resistance (breathability)

Water Penetration Resistance (Class X)

This measures how waterproof the outer material and seams are.

- Test Method: Hydrostatic pressure test (ISO 811) before and after pre-treatments:
- Abrasion (EN ISO 12947-2)
- Flexing (ISO 7854 Method B)
- Fuel/oil exposure (optional)
- Temperature conditioning (±5°C to +50°C)

Classes:

Class	Resistance (mm water column)	Description
1	≥ 5,000 Pa (50 cm)	Basic protection
2	≥ 8,000 Pa (80 cm)	Intermediate
3	≥ 13,000 Pa (130 cm)	High performance
4	≥ 20,000 Pa (200 cm)	Very high performance (new in 2019)

Class 4 was introduced in EN 343:2019 for high-end waterproof clothing.

2. Water Vapour Resistance (Class Y)

This measures how breathable the material is—how easily sweat vapor escapes through the fabric.

- Test Method: ISO 11092 (sweating guarded hotplate test)
- Results expressed as RET (Resistance to Evaporative Heat Transfer)

Classes:

Class	Water Vapour Resistance	Breathability	Remarks
1	Ret → 40	Very Low	Poor
2	25 ← Ret ↖ 40	Low	Moderate
3	15 ← Ret ↖ 25	Medium	Good
4	Ret ↖ 15	High	Best

Lower RET = Better breathability = More comfort for the wearer.
3. Readiness After Conditioning (Optional [R])

A new optional requirement in EN 343:2019:

- Garments are tested after conditioning cycles (e.g., flexing, abrasion, oil exposure).
- If they maintain Class 4 performance post-treatment, an "R" is added to the marking.

Additional Design Requirements

EN 343:2019 also specifies:

- Seam construction: Must be watertight (sealed, welded, or taped).
- Closure systems (e.g., zippers): Must not allow water ingress.
- Ventilation features: Must not compromise waterproofing.
- Material flexibility and comfort during movement and work.

Comparison: EN 343:2003+A1:2007 vs EN 343:2019

Feature	EN 343:2003+A1:2007	EN 343:2019
Max class level	Class 3	Class 4 introduced (for both X and Y)
Pre-treatment testing	Limited	Enhanced: flexing, abrasion, oil, etc.
Optional R marking (durability)	Not available	Introduced
Improved test repeatability	Moderate	Enhanced testing protocols
RET test method	Same (ISO 11092)	Same, but classes better defined
Alignment with other standards	Less aligned	Better harmonized with ISO and EU PPE Reg.

EN 342:2017 Protection Against Cold

Products are tested by measuring the insulation for an ensemble (jacket, trouser) worn. Air permeability and breathability are also measured. Figures (1, 2 or 3) are given against "X" for insulation, "Y" for air permeability and "Z" for breathability. Higher the number, better the results.

X Insulations; actual data (higher figure is best

Y Air permeability; level 1, 2 or 3

Z Breathability; level 1, 2 or 3

CATEGORY II

Covers products intended to be used in environments with risk for severe, but no fatal consequences. The products must be tested and certified by a notified body. Products under this category are flame retardant clothing (EN 531/533/16112), clothing for high visibility (EN 471) and lifejackets (EN 395, 396 and 399), and buoyancy aids (EN 393)

EN ISO 20471:2013 + A1:2016

EN ISO 20471:2013 & A1:2016 is an international standard for the safety requirements and test methods of high visibility clothing. It specifies requirements for "high visibility clothing which is capable of visually signalling the user's presence". It states that high visibility clothing is intended to provide conspicuity of the wearer in any light condition when viewed by operators of vehicles or other mechanised equipment during daylight conditions and under illumination of headlights in the dark.

The standard sets out performance requirements for colour and retroreflection as well as for the minimum areas and for the placement of the materials in protective clothing. It categorises high visibility garments into three classes; Class 1, Class 2, and Class 3 (see below).

All garments, such as vests, t-shirts, polo shirts, trousers and jackets, etc., should be labelled with the EN ISO 20471 icon and accompanied by the appropriate class number.

This is an example of how the label would look for a Class 2 garment:

Performance requirements for high visibility clothing EN ISO 20471 sets out design and performance requirements of each element of a garment. There are usually three main components:

1. The fluorescent background material This boosts visibility during daylight hours and can also increase visibility at night. There are 3 colours approved in the standard, - Yellow, Orange-Red and Red.
2. The retroreflective strips These are designed to enhance visibility during the darker hours of the day. Reflective strips require a light source to work and create retroreflection. They are essential for those working at night.
3. The contrast material Some high visibility clothing is designed with darker coloured parts that are less sensitive to dirt than the fluorescent material and reflective strips, without which the functionality would diminish. The areas covered with the contrast fabric tend to be where dirt is most likely to build up — for example, the sleeve ends and across the abdomen on high visibility fleeces and jackets, and the ankle and knee sections of high visibility work trousers and waterproof trousers.

Classes of high visibility clothing

Three classes of garment are defined based on three different minimum areas of retroreflective, fluorescent and/or combined performance materials.

Table 1 Minimum required areas of visible material in m^2

Material	Class 3 garments	Class 2 garments	Class 1 garments
Background material	0.80	0.50	0.14
Retroreflective material	0.20	0.13	0.10
Combined performance material	n.a.	n.a.	0.20
Note: The clothing class determined by the lowest area of visible material			

ARC TESTING METHODS:

1. OPEN ARC TEST METHOD {IEC 61482-1-1}

IEC 61482-1-1 is the Open Arc Test Method. It determines the Arc Thermal Protection Value (ATPV level) of the garment. The basic principle is that the ATPV of the garment must be higher than the Arc Flash energy level as calculated. The Arc Rating is expressed in cal/cm' (Calories per centimetre square).

2. BOX TEST METHOD {IEC 61482-1-2}

IEC 61482-1-2 is the Box Test Method. It determines the Arc Protection Class Rating of the material or garment by using a constrained and directed arc:

- Class 1 offers protection against electric arc 4kA (168 kJ)
- Class 2 offers protection against electric arc 7kA (320 kJ)

It is important to ensure that all garments have been tested fully and satisfy all the requirements of IEC 61482-2.

It is important to note that the requirements of the IEC 61482-2 standard do not address electric shock hazards. IEC 61482-2 is applicable in combination with other standards that cover such hazards

FEET PROTECTION

Mallcom is a pioneer in the manufacturing of directly injected polyurethane safety footwear. The process is used to make rugged shoes that tackle the challenges that workers are exposed to in construction, mining, metallurgical and other different industries. The uppers are made of leather in combination with various imported raw materials. Mallcom's shoes use imported steel plates and toe caps to protect its wearer from falling objects and penetration by sharp objects. Mallcom manufactures protective footwear as per EN 20345 and BIS 15298 standards.

Protective footwear worn in the workplace is designed to protect the foot from physical hazards such as falling objects, stepping on sharp objects, heat and cold, wet and slippery surfaces, or exposure to corrosive chemicals.

A. ASSESSMENT FACTORS

- Impact (falling/flying objects)
- Penetration (sharp objects piercing foot/hand)
- Compression (roll-over or pinching objects)
- Chemical exposure (inhalation, ingestion, skin contact, eye contact or injection)
- Extreme temperatures (heat or cold)
- Vibration
- Exposure to electricity

B. STANDARDS

EN344-1/EN ISO 20344 - Overall Requirement

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 involved

The current standard for safety shoes EN ISO 20345: 2012 will be updated and will now instead be EN ISO 20345: 2022. So what is new and what will change? Here is a review of the most important changes point by point

SIZE CORRESPONDANCE TABLE

Euro Size	39	40	41	42	43	44	45	46	47
UK Size	6	$6^{1/2}$	7	8	9	10	$10^{1/2}$	11	12
Mondo Point (cm)	25.9	26.6	27.3	27.9	28.6	29.3	29.9	30.6	31.3

COMPARATIVE STUDY BETWEEN EN 20345 STANDARD OLD AND NEW VERSION

BASIC REQUIREMENT		NEW CLAUSE NO.	EN 20345:2011	EN 20345:2022	REMARKS
Classification	Class I Footwear	4.0 Classification and designs	Yes	Yes	
	Class Ii Footwear	4.0 Classification and designs	Yes	Yes	
	Hybrid Footwear	4.0 Classification and designs	No	Yes	New Entry At 2022 Version
Design	Height Of Upper	5.2.2 Height of upper	Yes	Yes	New Entry At 2022 Version
	Heel Area (Design A)	5.2.3 Seat region	No	Yes	
	Heel Area (Design B, C, D, E)	5.2.3 Seat region	Yes	Yes	
Whole Footwear	Constructional Performance	5.3.1 Sole performance	Yes	Yes	
	Construction	5.3.1.1 Construction	Yes	Yes	
	Upper/outsole Bond Strength	5.3.1.2 Upper/outsole bond strength	Yes	Yes	
	Toe Protection	5.3.2 Toe protection	Yes	Yes	
	General	5.3.2.1 General	Yes	Yes	
	Internal Length Of Toecaps	5.3.2.2 Internal length of toecaps	Yes	Yes	New Entry At 2022 Version
	Width Of Toe Cap Flange	5.3.2.3 Impact resistance of safety footwear	No	Yes	
	Corrosion Resistance	5.3.2.4 Compression resistance of SF	Yes	Yes	New Entry At 2022 Version
	Behaviour Of Toecaps (Thermal And Chemical)	5.3.2.5 Behaviour of toecaps	No	Yes	Clause No. Change At New Version
	Impact Resistance	5.3.2.6 IMPACT RESISTANT	Yes, Cl: 5.3.2.3	Yes	Clause No. Change At New Version
	Compression Resistance	5.3.2.7 COMPRESSION RESISTANCE	Yes, Cl: 5.3.2.4	Yes	
	Leak Proofness	5.3.3 LEAK PROOFNESS	Yes	Yes	
	Specific Ergonomic Features	5.3.4 Specific ergonomic features	Yes	Yes	
	Slip Resistance	5.3.5 Slip resistance requirement	Yes	Yes	
	A. On Ceramic Floor With Nals (Marking Sra)		Yes, Cl: 5.3.5.2	X	
	B. On Steel Floor With Glycerine (Marking Srb)		Yes, Cl: 5.3.5.3	X	
	C. Both A & B (Marking Src)		Yes, Cl: 5.3.5.4	X	New Entry At 2022 Version
	D. "Not-tested" Symbol Ø	5.3.5.1 General	No	Yes	New Entry At 2022 Version
	E. On Ceramic Floor With Nals (No Marking/symbol)	5.3.5.2 Slip resistance on ceramic tile floor with sodium lauryl sulphate (NaLS) solution	No	Yes	
	Innocuosness	5.3.6 Innocuousness	Yes	Yes	New Entry At 2022 Version
	Seam Strength	5.3.7 SEAM STRENGTH	No	Yes, For Hybrid Footwear	New Entry At 2022 Version
	Water Resistance	6.2.5 Water resistance	Not In Basic Req, App. For	Yes, For Hybrid Footwear	
Upper	General	5.4.1 General	Add.	Yes	New Entry At 2022 Version
	Height Of The Area Where Upper Requirements Apply (Class I)	5.4.1.1 Class I footwear, determination of the area where upper requirements apply	Yes	Yes	New Entry At 2022 Version
	Height Of The Area Where Upper	5.4.1.2 Hybrid foot wear, determination of the area where upper requirements apply	No	Yes	
	Requirements Apply (Hybrid)		No		
	Thickness	5.4.2 Thickness	Yes	Yes	
	Tear Strength	5.4.3 Tear strength	Yes	Yes	
	Tensile Properties	5.4.4 Tensile properties	Yes	Yes	
	Flexing Resistance	5.4.5 Flexing resistance	Yes	Yes	New Entry At 2022 Version
	Water Vapour Permeability And Coefficient	5.4.6 Water vapour permeability and coefficient	Yes	Yes	New Entry At 2022 Version
	PH		Yes	No, Add On Cl: 5.3.6	New Entry At 2022 Version
	Resistance To Hydrolysis	5.4.7 pH value	Yes, Ci: 5.4.8	Yes	
	Chromium Vi Content	5.5.2 Abrasion resistance	Yes	No, Add On Cl: 5.3.6	
Vamp, Quarter & Seat Lining	Tear Strength	5.5.3 Water vapour permeability	Yes, Cl: 5.5.1	Yes	
	Abrasion Resistance	and coefficient	Yes, Cl: 5.5.2	Yes	New Entry At 2022 Version
	Water Vapour Permeability & Coefficient	5.5.4 pH value	Yes, Cl: 5.5.3	Yes	New Entry At 2022 Version
	PH		Yes, Cl: 5.5.4	No, Add On Cl: 5.3.6	
	Chromium Vi Content		Yes, Cl: 5.5.5	No, Add On Cl: 5.3.6	New Entry At 2022 Version
Tongue	Tear Strength	5.6.2 pH value	Yes, Cl: 5.6.1	Yes	New Entry At 2022 Version
	PH		Yes, Cl: 5.6.2	No, Add On Cl: 5.3.6	
	Chromium Vi Content		Yes, Cl: 5.6.3	No, Add On Cl: 5.3.6	
Insole,insock And Footbed	Thickness	5.7.1 Thickness	Yes	Yes	New Entry At 2022 Version
	Water Permeability	5.7.2 pH value	Yes, Cond.	Yes	New Entry At 2022 Version
	Water Absorption & Desorption	5.7.3 Water absorption and desorption	Yes	Yes	New Entry At 2021 Version
	Insole Abrasion	5.7.4.1 Insoles	Yes	Yes	
	Insock Abrasion	5.7.4.2 Insocks	Yes	Yes	
	PH		Yes, Cl: 5.7.2	No, Add On Cl: 5.3.6	
	Chromium Vi Content		Yes, Cl: 5.7.5	No, Add On Cl: 5.3.6	
Outsole	General	5.8.1 Design	No	Yes	
	Design	5.8.2 Tear strength	Yes, Cl: 5.8.1	Yes	Clause No. Change At New Version
	Tear Strength	5.8.3 Abrasion resistance	Yes, Cl: 5.8.2	Yes	Clause No. Change At New Version
	Abrasion Resistance	5.8.4 Flexing resistance	Yes, Cl: 5.8.3	Yes	Clause No. Change At New Version
	Flexing Resistance	5.8.5 Hydrolysis	Yes, Cl: 5.8.4	Yes	Clause No. Change At New Version
	Hydrolysis	5.8.6 Interlayer bond strength	Yes, Cl: 5.8.5	Yes	Clause No. Change At New Version
	Interlayer Bond Strength	5.8.7 Interlayer bond strength	Yes, Cl: 5.8.6	Yes	Clause No. Change At New Version

ADDITIONAL REQUIREMENT		NEW CLAUSE NO.	EN 20345:2011	EN 20345:2022	REMARKS	NEW SYMBOL
WHOLE FOOTWEAR	Pentration Resistance	6.2.1 Perforation resistance	YES	YES, NAME CHANGE	New Entry At 2021 Version	
	A. Perforation Resistance - Metal Insert Type P	6.2.1.1.2 General	NO	YES	New Entry At 2021 Version	P
	B. Perforation Resistance - Nonmetal Insert Type Pl	6.2.1.1.3 Non – Metallic Perforation resistant inserts and insoles (Type PL)	NO	YES	New Entry At 2021 Version	PL
	C. Perforation Resistance - Nonmetal Insert Type Ps	6.2.1.1.4 Non – Metallic Perforation resistant inserts and insoles (Type PS)	NO	YES	New Entry At 2021 Version	PS
	Electrical Properties	6.2.2 Electrical properties	YES	YES		
	A. Partially Conductive Footwear	6.2.2.1 Partially conductive footwear	YES	YES, NAME CHANGE	New Entry At 2022 Version	C
	B. Antistatic Footwear	6.2.2.2 Antistatic footwear	YES	YES		A
	C Electrically Insulating Footwear	6.2.2.3 electrically insulating footwear	YES	NO	Delete At 2022 Version	
	Resistance To Inimical Environments	6.2.3 Resistance to inimical environments	YES	YES		
	A. Heat Insulation Of Outsole Complex	6.2.3.1 Heat insulation of sole complex	YES	YES		HI
	B. Cold Insulation Of Outsole Complex	6.2.3.2 Cold insulation of sole complex	YES	YES		CI
	Energy Absorption Of Seat Region	6.2.4 Energy absorption of seat region	YES	YES		E
	Water Resistance	6.2.5 Water resistance	YES	YES		WR
	Metatarsal Protection	6.2.6 Metatarsal protection	YES	YES		M
	Ankle Protection	6.2.7 Ankle protection	YES	YES		AN
	Cut Resistance	6.2.8 Cut resistance footwear	YES	YES		CR
	Scuff Cup Abrasion	6.2.9 Scuff cap abrasion	NO	YES	New Entry At 2022 Version	SC
	Slip Resistance On Ceramic Tile Floor With Glycerine	6.2.10 Slip resistance	NO	YES	New Entry At 2022 Version	SR
UPPER	Water Penetration And Absorption	6.3 Water penetration and absorption	NO	YES	New Entry At 2022 Version	WPA
OUTSOLE	Resistance To Hot Contact	6.4.1 Resistant to hot contact	YES	YES		HRO
	Resistance To Fuel Oil	6.4.2 Resistance to fuel oil	YES	YES		FO
	Ladder Grip	6.4.3 Ladder Grip	NO	YES	New Entry At 2022 Version	LG

MARKING CATEGORY	EN 20345:2011	EN 20345:2022	REMARKS
SB	For Class I And Class Ii	For Class I And Class Ii , Hybrid Footwear	
S1	As Sb, Plus	As Sb, Plus	
	Closed Heel Area	Closed Heel Area	
	Energy Absorption Of Seat Region	Energy Absorption Of Seat Region	
	Resistance To Fuel Oil	Na	Deleted At 2021 Version
	Antistatic	Antistatic	
S2	As S1, Plus	As S1, Plus	
	Water Penetration And Absorption	Water Penetration And Absorption	
S3 (Metal Insert Type P) Or	As S2, Plus	As S2, Plus	
S3l (Nonmetal Insert Type Pl) Or	Cleated Outsole	Cleated Outsole	
S3s (Nonmetal Insert Ps)	Penetration Resistance	Perforation Resistance	
S4	As Sb, Plus	As Sb, Plus	
	Closed Heel Area	Closed Heel Area	
	Energy Absorption Of Seat Region	Energy Absorption Of Seat Region	
	Resistance To Fuel Oil	Resistance To Fuel Oil	
	Antistatic	Antistatic	
S5 (Metal Insert Type P) Or	As S4, Plus	As S4, Plus	
S5l (Nonmetal Insert Type Pl) Or	Cleated Outsole	Cleated Outsole	
S5s (Nonmetal Insert Ps)	Penetration Resistance	Penetration Resistance	
S6	No	As S2, Plus	New Entry At 2022 Version
	No	Water Resistance Of Whole Footwear	New Entry At 2022 Version

MARKING CATEGORY	EN 20345:2011	EN 20345:2022	REMARKS
S7 (Metal Insert Type P) Or	No	As S3, Plus	New Entry At 2022 Version
S7l (Nonmetal Insert Type Pl) Or	No	Water Resistance Of Whole Footwear	New Entry At 2022 Version
S7s (Nonmetal Insert Ps)	No		New Entry At 2022 Version
SBH	Hybrid Footwear	Hybrid Footwear	

MARKING SYMBOL	EN 20345:2011	EN 20345:2021	REMARKS
PERFORATION RESISTANCE			
METAL INSERT - TYPE P	P	P	
NON-METAL INSERT - TYPE PL	XXX	PL	New Entry At 2022 Version
NON-METAL INSERT - TYPE PS	XXX	PS	New Entry At'rsion
ELECTRICAL PROPERTIES			
A. PARTIALLY CONDUCTIVE FOOTWEAR	C	C	
B. ANTISTATIC FOOTWEAR	A	A	
C ELECTRICALLY INSULATING FOOTWEAR		XXX	Deleted At 2022 Version
RESISTANCE TO INIMICAL ENVIRONMENTS		HI	
A. HEAT INSULATION OF OUTSOLE COMPLEX	HI	CI	
B. COLD INSULATION OF OUTSOLE COMPLEX	CI	E	
ENERGY ABSORPTION OF SEAT REGION	E	WR	
WATER RESISTANCE	WR	M	
METATARSAL PROTECTION	M	AN	
ANKLE PROTECTION	AN	CR	
CUT RESISTANCE	CR	SC	
SCUFF CUP ABRASION	XXX	WPA	New Entry At 2022 Version
WATER PENETRATION AND ABSORPTION	WRU	HRO	New Entry At 2022 Version
RESISTANCE TO HOT CONTACT	HRO	FO	
RESISTANCE TO FUEL OIL	FO	LG	
LADDER GRIP	XXX		New Entry At 2021 Version
SLIP RESISTANCE	SRA	XXX	
A. ON CERAMIC FLOOR WITH NaLS			Deleted At 2022 Version
B. ON STEEL FLOOR WITH GLYCERINE	SRB	XXX	Deleted At 2022 Version
C. BOTH A & B	SRC	XXX	Deleted At 2022 Version
D. IF "NOT-TESTED"	XXX	Ø	New Entry At 2022 Version
E. ON CERAMIC TILE FLOOR WITH NaLS	XXX	NO MARKING	New Entry At 2022 Version
F. ON CERAMIC TILE FLOOR WITH GLYCERINE	XXX	SR	New Entry At 2022 Version

ASTM F2412

Standard Test Methods for Foot Protection

The ASTM F2412 test methods measure resistance of footwear to hazards that may result in injury to the worker.

These methods may be used to test for compliance to minimum performance requirements in established safety standards. The test methods can be used to determine the effectiveness of the footwear to provide any one, or all of the following protections:

- Impact resistance to eliminate or diminish the severity of injury caused by objects striking the foot, and in particular in the toes and metatarsal region
- Reduced buildup of static electricity from the wearer to the ground Shock absorbance
- Puncture resistance and chain saw resistance
- Dialectic insulation to reduce the possibility of injury when exposed to a high voltage charge. Electrical hazard (EH) footwear is manufactured with non-conductive, electrical-shock-resistant soles and heels. The outsole is

intended to provide a secondary source of electric-shock-resistance protection to the wearer against the hazards from an incidental contact with live electrical circuits or electrically energized conductors, parts or apparatus. It must be capable of withstanding the application of 18,000 volts at 60 hertz for one minute with no current flow or leakage current in excess of one milliampere under dry conditions.

The standard describes the specific methods, including diagrams of the equipment used (when appropriate), to conduct the testing for each of the protections listed above.

Codes and requirements:

PL - Perforation resistance (non metal insert)
PS - Perforation resistance (non metal insert)
C - Partly conductive footwear
A - Anti-static footwear HI - Heat insulation of outsole complex
CI - Cold insulation of outsole complex
E - Energy absorption of seat region
WR - Water resistance
M - Metatarsal protection
AN - Ankle protection
CR - Cut resistance
SC - Scuff cap abrasion
SR - Slip resistance (ceramic tile floor with glycerine)
WPA - Water penetration and absorption
HRO - Resistance to hot contact
FO - Resistance to fuel oil
LG - Ladder grip

Ladder Grip

Previously, "heel grip for ladder" has been included in the standard for shoes intended for firefighters. That part has been copied for a stand-alone additional test for all safety shoes. This makes it possible to test all safety shoes with regard to step grip in the new standard. Please note that this is one of several additional tests that are not mandatory.

FO is no longer mandatory

The marking FO refers to the shoe sole's resistance to hydrocarbons (oils, petrol, etc.). This has previously been a mandatory part for protection level SI-S5, ie as soon as you do not have a shoe with an open heel. FO will henceforth be an additional test that can be done for shoes intended for environments with hydrocarbons, where relevant.

Water resistance

Two new levels of protection have been added; S6 and S7. What S6 and S7 have in common is that these protection levels have requirements for water resistance (Water-Resistant, marking WR). Otherwise, S6 means the same protection as the requirement for S2 but with additional requirements for water tightness (WR), while S7 is the same as S3 but with additional requirements for water tightness (WR).

An approved shoe with the marking S2 or S3 has according to the "old" standard a water repellent upper (WRU - Water Repellent Upper). However, only the material itself is tested to obtain WRU. When the material is included in a shoe, the shoe as a whole can lose its water-repellent ability because water penetrates into the seams.

In the new standard, the marking WRU disappears, instead we see the marking WPA (Water penetration and absorption) and the marking as already mentioned; WR.

SOLE NAME Specifications	TIGER	PHOENIX	DARWIN	OLIVER	GRIFFIN	GARUD
MATERIAL	PU	PU/PU OR PU/RUBBER	PU/PU OR PU/RUBBER	PU/PU OR PU/RUBBER	PU/PU	PU
DENSITY	SINGLE	DUAL-DENSITY	DOUBLE	DOUBLE	DUAL-DENSITY	SINGLE DENSITY
TPR INSERT	YES	YES	NO	YES	YES	NO
TOE CAP	STEEL	STEEL OR FIBREGLASS	STEEL	BOTH	STEEL OR FIBREGLASS	STEEL OR FIBREGLASS
BUMPER CAP	NO	NO	NO	YES	YES	NO

SB or S1 to S5 (safety footwear) - PB or P1 to P5 (protective footwear) - 01 to 05 (occupational shoes)			
CLASS 1 OR 2	**EN 345-1 / EN ISO 20345**	**EN 346-1 / EN ISO 20346**	**EN 347-1 / EN ISO 20347**
ALL MATERIALS	SB : basic properties	PB : basic properties	PB : basic properties
CLASS 1 ALL MATERIALS EXCEPT FOR NATURAL OR SYNTHETIC	S1 : basic properties plus : - closed back - antistatic - energy absorbing heel	P1 : basic properties plus : - closed back - antistatic - energy absorbing heel	O1 : basic properties plus :- closed back - hydrocarbon-resistant sole - antistatic - energy absorbing heel
	S2 : the same as S1 plus : - waterproof	P2 : the same as P1 plus : - waterproof	O2 : the same as O1 plus : - waterproof
CLASS 2 NATURAL AND SYNTHETIC POLYMERS	S3 : the same as S2 plus : - puncture resistant sole - studded sole	P3 : the same as P2 plus : - puncture resistant sole - studded sole	O3 : the same as O2 plus : - puncture resistant sole - studded sole
	S4 : basic properties plus : - antistatic - energy absorbing heel	P4 : basic properties plus : - antistatic - energy absorbing heel	O4 : basic properties plus : - antistatic - energy absorbing heel
	S5 : the same as S4 plus : - puncture resistant sole - studded sole	P5 : the same as P4 plus : - puncture resistant sole - studded sole	O5 : the same as O4 plus : - puncture resistant sole - studded sole

C. TERMINOLOGY

Safety Footwear - Footwear, incorporating protective features to protect the wearer from injuries which could arise through accidents, fitted with toe caps, designed to give protection against impact when tested at an energy level of at least 200 J and against compression when tested at a compression load of at least 15 kN

Full Grain Leather - Hide or skin tanned to be imputrescible having conserved the totality of its grain

Corrected Grain Leather - Hide or skin tanned to be imputrescible which has been subjected to mechanical buffing to modify its grain structure

Leather Split - Flesh or middle part of a hide or skin tanned to be imputrescible obtained by splitting a thick leather

Rubber Vulcanized elastomers

Polymeric Materials - For example polyurethane (PU) or polyvinyl chloride (PVC)

Insole - Non-removable component used to form the base of the shoe to which the upper is usually attached during lasting

Insock - Removable or permanent footwear component used to cover part or all of the insole

Lining - Material covering the inner surface of the upper

NOTE 1: The wearer's foot is in direct contact with the lining.

NOTE 2: Where an upper is split at the forepart to house the toe cap, or if an external piece of material is stitched to the upper to form a pocket to house the toe cap, the material under the toe cap acts as a lining.

Vamp Lining Material covering the inner surface of the forepart of the upper

Quarter Lining - h1aterial covering the inner surface of the quarters of the upper

Cleat(s) - Protruding part(s) of the outer surface of the sole

Rigid Outsole - Sole which, when the complete footwear is tested cannot be bent through an angle of 45 degrees under a load of 30N

Cellular Outsole Out sole having a density of 0.9 g/ml or less with acell structure visible under I0x magnification

Penetration-resistant Insert - Footwear component placed in the sole complex in order to provide protection against penetration

Safety Toe Cap - Footwear component built into the footwear designed to protect the toes of the wearer from impacts up to an energy level of at least 200 J and compression at a load of at least 15 kN

Seat Region - Back part of the footwear (upper and sole)

Conductive Footwear - Footwear whose resistance lies in the range of 0 to 100k

Antistatic Footwear - Footwear whose resistance lies above 100k and is less than or equal to 1,000M

Electrically Insulating Footwear - Footwear protects the wearer against electrical shocks by preventing the passage of dangerous current through the body via the feet

Fuel Oil - Aliphatic hydrocarbon constituent of petroleum

Specific Job Related Footwear - Safety, protective or occupational footwear relating to a specific profession, e.g. footwear for firefighters, footwear with resistance to chainsaw cutting, etc.

Safety Footwear Standard – What are the changes?

The EN ISO 20345:2011 safety footwear standard has been replaced by the new EN ISO 20345:2022 standard. The standard has a transition period until the end of 2027, so there will be products on the market that are certified according to both the new and the old standard.

All Sievi products certified after 1 January 2023 have been tested according to the new EN ISO 20345:2022 standard.

1. Puncture resistance of the perforation-resistant insert

Penetration resistance

The term 'penetration resistance' for describing safety footwear will now be replaced by the phrase 'puncture resistance'. The puncture resistance test will now be carried out on the basis of ISO 22568-3 and ISO 22568-4 instead of EN 12568.

New symbols for the certification of safety footwear for puncture resistance have also now been added:

Symbol	Description
P	• For steel soles • At least 1,100 newtons of pressure • Tested with 4.5 mm nail
PL	• For non-metallic soles • With 1,100 newtons of pressure • Tested with 4.5 mm nail
PS	• For non-metallic soles • Average value of four tests must not be lower than 1,100 newtons • Tested with 3.0 mm nail

The protection markings for perforation-resistant insert can be, for example: S3S, S3L, S1P, S1PS, S1PL.

2. Slip resistance

In the previous standard, slip resistance was marked as follows: SRA, SRB and SRC.

In the new standard, slip resistance no longer has a separate letter symbol in the certificate as it is a basic requirement. The test is equivalent to the former SRA test carried out on a ceramic tile coated in a soap solution.

An additional feature is a test carried out on a ceramic tile with a glycerol solution. This is marked with SR (= Slip Resistance) in the certificate. The additional feature is not obligatory.

If it is not possible to carry out the slip resistance tests on special shoes or boots (e.g. footwear with integrated studs), they are marked with the symbol

3. Waterproof and water resistant

In the previous standard, water resistance of the upper material was marked with the symbol WRU (Water Repellent Upper).

In the new standard, water resistance of the upper material is marked with the symbol WPA (Water Penetration and Absorption). The waterproof feature is marked with WR (Water Resistance). There are also two new protection classes, S6 and S7, for waterproof footwear.

S6 = the footwear meets the requirements of class S2 and is also waterproof (WR).

S7 = the footwear meets the requirements of class S3 and is also waterproof (WR).

4. New additional features

Scuff cap (SC): In order to determine abrasion on the overcap, a Martindale abrasion test of 8,000 cycles will be carried out. According to the test, the overcap must not develop any holes across its entire thickness.

Slip resistance (SR): This new additional requirement tests the slip resistance of the safety shoes on ceramic tiles with glycerine. When the heel slides forward, a coefficient of friction of ≥ = 0.19 mm is allowed. When the front part of the shoe slides backwards, a coefficient of friction of ≥ = 0.22 mm is allowed.

Ladder grip (LG): To offer better grip on ladders, the outsole of a safety shoe must have a transverse profile with a height of at least 1.5 mm in the ankle area.

CROSS-SECTION OF A SAFETY SHOE

GLOSSARY OF ICONS:

Head Impact	Shock	Electrical Hazard	Bump	Puncture	Light & Comfortable	High visibility	Snuggly Fitting	Dust
Indoor & Outdoor	Anti Scratch	Anti Fog	Projectiles	Welding	Noise Reduction	UV	Microbe	Splash
Infrared	Cold Insulation	Water Repellent	Abrasion	Cut Proof	Tear	Dexterity	Hygienic	Flexible
Antistatic	Breathable	Low visibilty	Particle resistant	Multi Utility	Dotting	Reinforce	High Cut	Bio Hazard
Micro organism	Cryogenic	Rough	Extensive Length	Chemical Protection	Thermal Insulation	Hand Impact	Metal Free	Sparks
Flame	Heat	Rain	Wear	Washable	Ergonomics	Durability	Recycled	Steel Toecap
PU/PU	Composite Toecap	Fibreglass Toecap	Flyknit	Thermo plastic Toecap	Microfibre	Wide Toecap	PU	PU/Rubber
Impact Resistant	Energy Absorbent	Anti Static	Puncture Resistant	Oil Resistant	Slip Resistant	Hydrocarbon Resistant	Ladder Grip	Food Grade

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