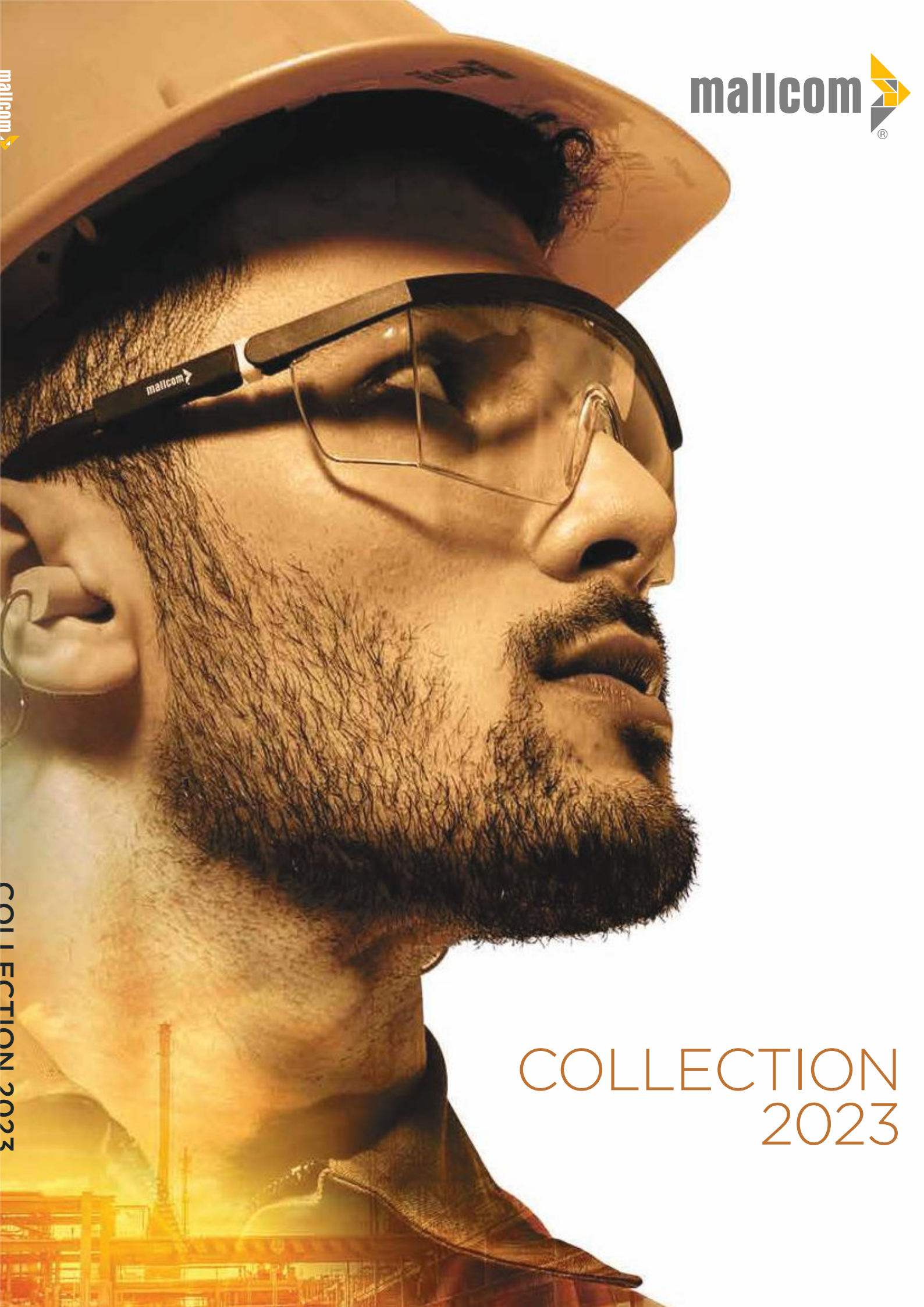


COLLECTION 2023

08
Head
Protection

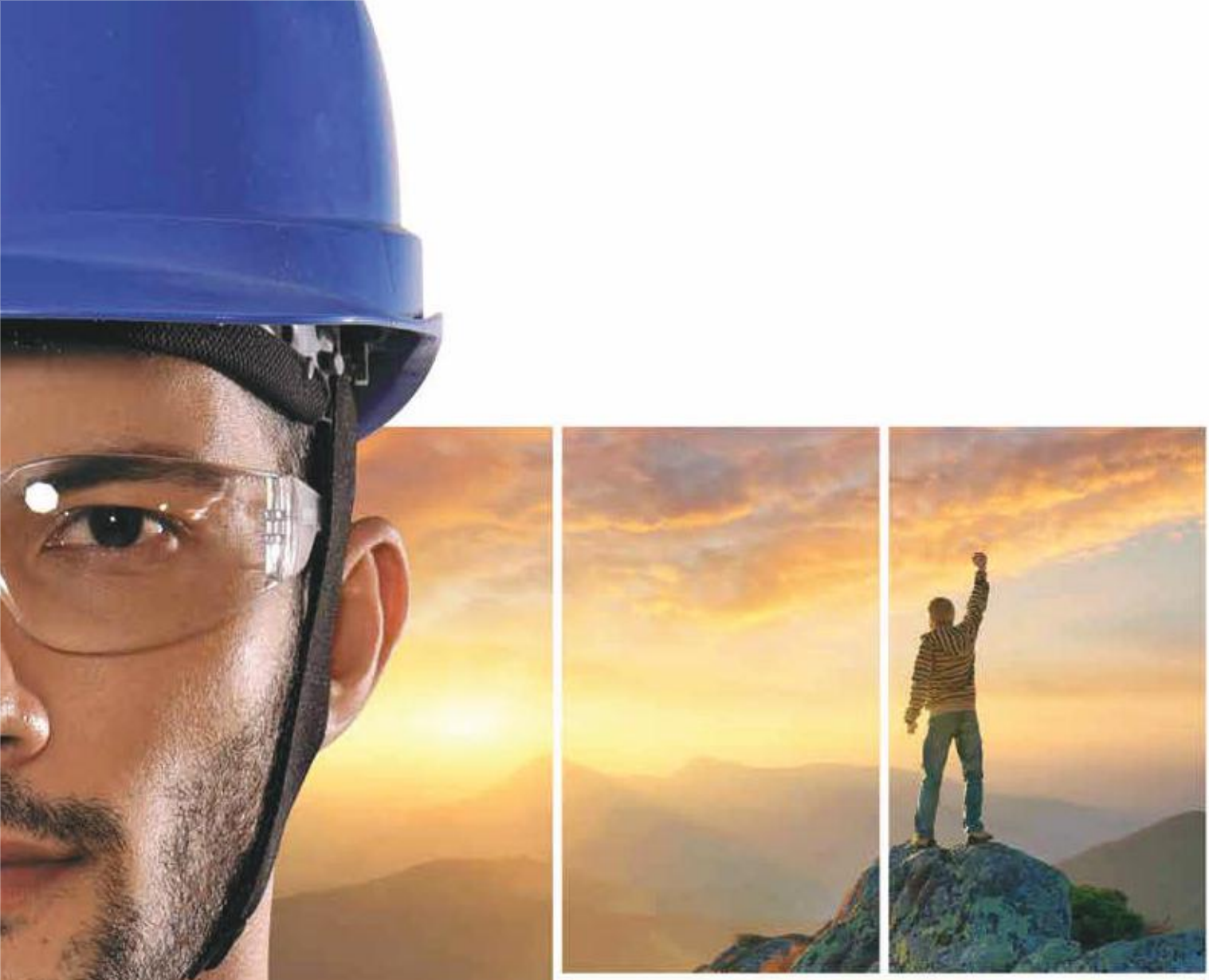
24
Hand
Protection

78
Body
Protection

mallcom®

126
Feet
Protection

158
Technical
Information



The Vision

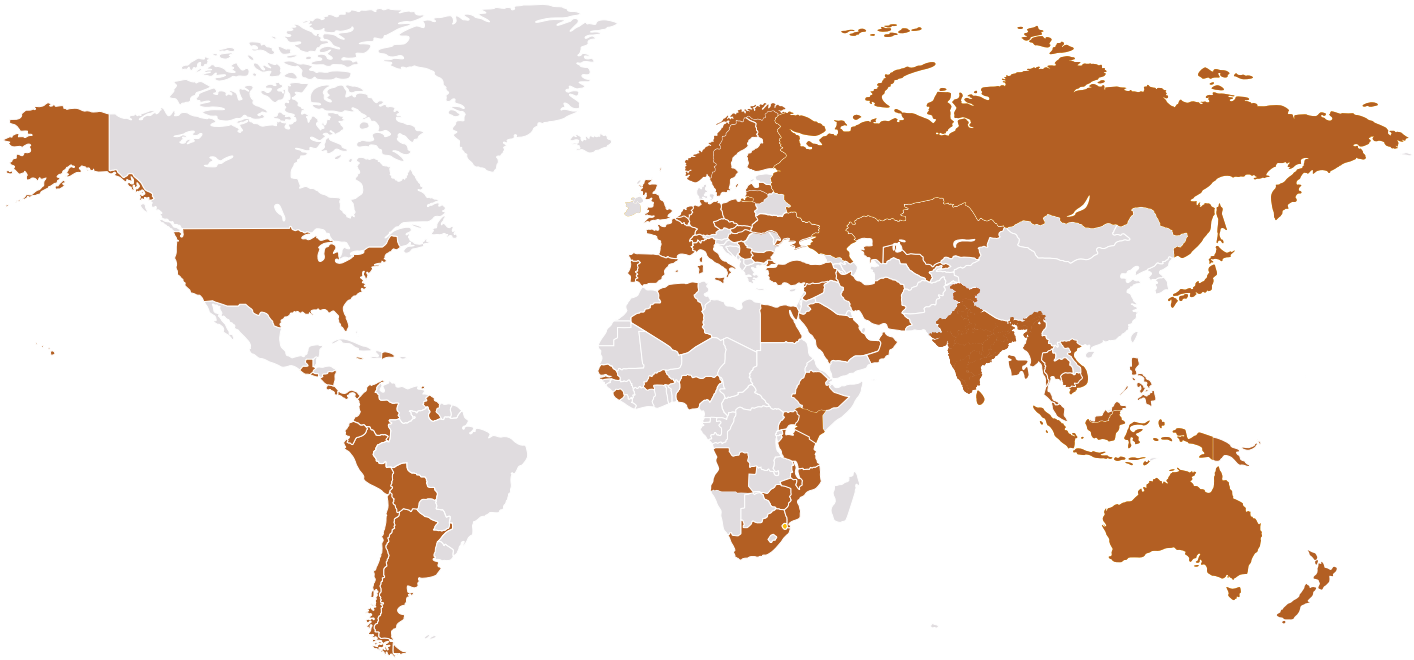
Mallcom's vision is to reach the highest levels of quality, innovation, reliability and perfection, through its products. We believe that our integrity is what will carve out a firm presence for us in the world of PPE.

Why Mallcom?

Mallcom (India) Ltd., a leading Personal Protective Equipment (PPE) brand in India, is completing 40 years in 2023. Having a strong presence in more than 50 countries on 6 continents, it has established itself as one of the most preferred integrated manufacturers and distributors of head-to-toe protection gear. Mallcom (India) Ltd. is an ISO 9001:2015, 14001:2015 certified and SA 8000:2008 compliant company. With 13 manufacturing units across India and in-house state-of-the-art labs with the capability for testing as per EN/BIS/NFPA compliance, Mallcom is continuously evolving with new ranges of PPE products including helmets, outerwear, goggles, gloves and shoes.

Putting safety and sustainability at the core of everything, Mallcom is committed to keeping the workforce safe. After all, they are the ones who drive us forward.

We are here



13 Manufacturing Units Across India

50+ Countries

80+ Dealer Networks

3,000 Workforce

Global Footprint

Mallcom is present across 50+ nations worldwide. Through the years our innovative products have made us leaders in the field of personal protective equipment. We share our knowledge and progress regularly with dealers to ensure the best experience for our clients.

Capacity per annum

14 mn
pairs of Nitrile Gloves

12 mn
pairs of Leather Gloves

3.5 mn
units of Workwear

1.2 mn
units of Helmet

3 mn
pairs of Shoes

150 mn
units of Masks

Product Accreditations

Facility Accreditations

The Values

COMMITMENT

At Mallcom, our attempt is to stay committed to all our stakeholders, colleagues, suppliers, associates or clients.

OWNERSHIP

Mallcom believes in creating intrapreneurs by creating a conducive environment for growth along with responsibility.

INTEGRITY

Integrity has been the foundation of our core values. This value is ingrained in each decision taken by Mallcom and its employees.

Research & Development

With a strong belief in innovation, Mallcom products are rigorously tested in its Research and Development departments. Mallcom has its testing laboratories established in each of its manufacturing units where constant product development and testing is conducted. The cognizant R&D team takes pride in its up-to-date technological arrangements for the necessities in development. We believe in embracing the latest technologies for the betterment of our manufacturing excellence.

Head Protection

Mallcom has come up with a comprehensive head protection range - covering the head, eye, ear and face. Mallcom works in close coordination with designers and users to provide dynamic head protection gear. Mallcom has gained expertise in the entire safety manufacturing process, starting with sourcing to molding, assembly & finally packaging of these products in the safety range.

- SAFETY HELMETS
- SURGICAL MASKS
- BUMP CAPS
- FACE MASKS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DIAMOND XII

High density polyethylene (HDPE) ventilated shell
Textile lining with 3 bands & 8 attachment points
Sweat band and shock pad for comfort
Ratchet adjustor for size and height

Ventilation sliders

Wheel ratchet

Ear defender slot

Height adjustment

Textile harness

Ratchet closure

Available colours:

Green Orange Red Blue Yellow White

CE EN 397:2012 IS 2925

DIAMOND I

UV resistant high density polyethylene (HDPE) shell
Textile lining with 3 bands & 8 attachment points
Sweat band and shock pad for comfort
Belt adjustor for size and height
53 to 63 cm

EN 397 IS 2925

DIAMOND V

UV resistant ABS shell
Nylon lining with 3 bands & 8 attachment points
Sweat band and shock pad for comfort
Ratchet adjustor for size and height
53 to 63 cm

AS/NZS 1801:1997 EN 397 IS 2925

HFI

Zip tightening with textile lining
Compatible with Diamond
Colour: grey

RFI

Ratchet tightening with textile
Compatible with Diamond
Colour: grey

JADE

ABS shell Bump Cap
Orange poly cotton fabric with mesh
5 cm peak with reflective tape
Adjustable detachable chin strap
Velcro fastening and reflective tapes

Reflective tapes

Mesh for ventilation

Velcro closure

CE
EN 812:2012

Design and colour can be customised

SAPPHIRE SP B

Lightweight impact-resistant short peak baseball type cap
Sturdy poly-cotton outer shell
Black coloured HDPE shell
EVA reinforcement with cotton and mesh polyester
Adjustable single size by velcro band from 52 to 56 cm

CE
EN 812:2012

TOPAZ HI VIS

Lightweight impact-resistant baseball type cap
EVA reinforcement with cotton and mesh polyester
Sturdy poly-cotton outer shell
Grey coloured ABS shell
Adjustable single size by velcro band from 58 to 62 cm

CE
EN 812:2012

AMBER

Lightweight polypropylene shell (PP)
Hi-vis poly cotton outer fabric
Mesh on both sides
Available with ventilation holes
Reflective piping for visibility
Detachable chin strap
Metal buckle for size adjustment


Hi-vis Fabric


Mesh for ventilation


EVA foam padding inside


Reflective tape


Custom Branding


Chin Strap

CE
EN 812:2012

Design and colour can be customised

GARNET

Lightweight impact-resistant short peak baseball type cap
Sturdy poly-cotton outer shell
Black polypropylene (PP) shell
EVA reinforcement with cotton and mesh polyester
Adjustable single size by velcro band from 52 to 56 cm
Available with ventilation holes on sides
Foam padding inside

CE
EN 812:2012

PEARL

Lightweight impact-resistant baseball type cap
EVA reinforcement with cotton and mesh polyester
Sturdy poly-cotton outer shell
Grey coloured ABS shell
Adjustable single size by velcro band from 58 to 62 cm
Reflective tape on sides

CE
EN 812:2012


mallcom

M1202PV

Foldable half filtering FFP2 face mask
White colour with yellow exhalation valve
Aluminium nose clip
Ultrasonically sealed mask
Head loop elastic fastening system


Nose clip


Valve


Custom printing


Ultrasonic welding


Head loop

Available colours:

White Grey Yellow

EN 149:2001+A1:2009 IS 9473:2002

M2102P

Foldable half filtering FFP1 face mask
Grey coloured
Aluminium nose clip
Ultrasonically sealed mask
Head loop elastic fastening system

CE EN 149:2001+A1:2009 IS 9473:2002

M3102PV

Foldable half filtering FFP3 face mask
Yellow colour with white exhalation valve
Aluminium nose clip
Ultrasonically sealed mask
Head loop elastic fastening system

CE EN 149:2001+A1:2009 IS 9473:2002

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

Loop adjuster

Valve

Head loop

Concealed nose clip

Custom printing

Available colours:

White Grey Yellow

EN 149:2001+A1:2009 IS 9473:2002

L1203P

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

CE
EN 149:2001+A1:2009 IS 9473:2002

L 2103PV

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

CE
EN 149:2001+A1:2009 IS 9473:2002

LK86L3

Pleated disposable 3-layer hygiene mask
Green printed design in colourful zip packing
Concealed nose clip offers snuggly fitting
Ultrasonic sealing and elastic ear hooks


Printed design


Ear loop


Conceled nose clip

Ultrasonic wave

Pleated

Available colours:


Hospital Blue


Hospital Green


Black


White


Printed

IS 16289:2014
Class I & II

CE
Type IIR

CK86P3

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

IS 16289:2014
Class I & II

CE
Type IIR

CM86P3

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

IS 16289:2014
Class I & II

CE
Type IIR

KL86P3

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

IS 16289:2014
Class I & II

CE
Type IIR

NK86L3

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

IS 16289:2014
Class I & II

CE
Type IIR

Hand Protection

mallcom

Mallcom has gained unparalleled expertise in 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.


mallcom

LPKY

Light palm yellow nitrile coated gloves
Cotton interlock knitted fabric lining
Cut and sewn with knitted wrist

EN 388:2016 + A1:2018

4111X CE

LPKB

Light palm blue nitrile coated gloves
Cotton interlock knitted fabric lining
Cut and sewn with knitted wrist

EN 388:2016 + A1:2018

4111X CE

LFKY

Light full yellow nitrile coated gloves
Cotton interlock knitted fabric lining
Cut and sewn with knitted wrist

EN 388:2016 + A1:2018

4121X CE

GPKY

Eco range palm yellow nitrile coated gloves
Cotton interlock knitted fabric lining
Cut and sewn with knitted wrist

EN 388:2016 + A1:2018

3111X CE

Available in size 7 to 11

MPCB

Medium palm blue coated nitrile glove
Cotton interlock lining and ventilated back
Cut and sewn with safety cuff

EN 388:2016 + A1:2018
4121X
CE

MPKB

Medium palm blue coated nitrile glove
Cotton interlock knitted lining
Cut and sewn with knitted wrist

EN 388:2016 + A1:2018
4121X
CE

MFCB

Medium palm blue coated nitrile glove
Cotton interlock knitted lining
Cut and sewn with safety cuff

EN 388:2016 + A1:2018
4121X
CE

MFKB

Medium full blue nitrile coated gloves
Cotton interlock knitted lining
Cut and sewn with knitted wrist

EN 388:2016 + A1:2018
4121X
CE

Available in size 7 to 11

DFRB

High performance cut and sewn nitrile gloves
Cut-resistant fiberglass blended para-aramid liner
Heavy full nitrile coating on shell
Cotton fleece shell rexin cuff material


Rexin Cuff


Extended Nitrile Coating


Performance Liner

EN 388:2016 + A1:2018
4532D

EN 407:2020
X2XXXX

D Cut Level D

5 Cut Level 5

DFJB

High performance cut and sewn gauntlet
Cut-resistant fiberglass blended para-aramid liner
Heavy full nitrile coating on shell

NEW


Extended cuff

EN 388:2016 + A1:2018
4532D

EN 407:2020
X2XXXX

D Cut Level D

5 Cut Level 5

Available in size 7 to 11

SFCB

Eco range light full blue nitrile coated gloves
Cotton fleecy fabric lining
Cut and sewn gloves with safety cuff

EN 388:2016 + A1:2018

4121X

CE

TMCY

Heavy full yellow nitrile coated gloves
Dipping covered cuff
Cut and sewn gloves with safety cuff

EN 388:2016 + A1:2018

4121X

TFCB

Heavy full blue nitrile coated gloves
Cotton jersey fabric lining
Cut and sewn gloves with safety cuff

EN 388:2016 + A1:2018

4221B

CE

TFKB

Heavy full blue nitrile coated gloves
Cotton jersey fabric lining
Cut and sewn gloves with knitted wrist

EN 388:2016 + A1:2018

4221B

CE

Available in size 7 to 11

TPCB

Heavy palm blue nitrile coated gloves
Cotton jersey fabric lining
Cut and sewn gloves with safety cuff

EN 388:2016 + A1:2018
4221B
CE

TPCB-R

Heavy palm blue nitrile coated gloves
Cotton jersey fabric lining and rough finish
Cut and sewn gloves with safety cuff

EN 388:2016 + A1:2018
4121X
CE

TPCB-R1

Heavy palm blue nitrile coated gloves
Cotton jersey fabric lining and micro rough finish
Cut and sewn gloves with safety cuff

EN 388:2016 + A1:2018
4121X

TPKB

Heavy palm blue nitrile coated gloves
Cotton jersey fabric lining with ventilated back
Cut and sewn gloves with knitted wrist

EN 388:2016 + A1:2018
4221B
CE

Available in size 7 to 11

TECHO IL 40

40cm yellow nitrile gauntlet
Heavy NBR full coating
Cotton Interlock lining

EN 388:2016 4221X
ISO 374-1: 2016/TYPE C K
EN 374-5:2016

TECHO FL 30

30cm blue nitrile gauntlet
Heavy NBR full coating
Cotton fleece lining

EN 388:2016 4221X
ISO 374-1: 2016/TYPE C K
EN 374-5:2016

TECHO FL 40

40cm blue nitrile gauntlet
Heavy NBR full coating
Cotton fleece lining

EN 388:2016 4221X
ISO 374-1: 2016/TYPE C K
EN 374-5:2016

Available in size 7 to 11

P75NCA

Transparent NBR palm coated gloves
15G violet polyester seamless liner
Light coating with smooth finish

NEW

EN 388:2016 +
A1:2018
4121X

P65NCA

Transparent NBR palm coated gloves
15G lemon green polyester seamless liner
Light coating with smooth finish

NEW

EN 388:2016 +
A1:2018
3111X

P25NGA

Grey NBR palm coated gloves
15G white polyester seamless liner
Light coating with smooth finish

EN 388:2016 +
A1:2018
4121X CE

P35NBA

Black NBR palm coated gloves
15G grey polyester seamless liner
Light coating with smooth finish

EN 388:2016 +
A1:2018
4121X CE

Available in size 7 to 11

P35NBG

Black NBR palm coated gloves
15G grey polyester seamless liner
Palm coating with sandy finish

EN 388:2016 + A1:2018

4121X

CE

P65NAG

Blue NBR palm coated gloves
15G hi-vis polyester seamless liner
Palm coating with sandy finish

EN 388:2016 + A1:2018

4121X

CE

N33VBA

Black NBR palm coated gloves
13G grey nylon seamless liner
PVC dots on palm for better gripping

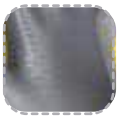
Anti slip surface

EN 388:2016 + A1:2018

4121X

PR4NGA

Grey NBR palm coated gloves
13G yellow polyester knitted seamless liner
Anti-slip liner with smooth finish



Improved Grip

EN 388:2016 + A1:2018

4121X

CE

Available in size 7 to 11

NS5NHT

NEW

Black over blue dual coated NBR gloves
15G blue nylon seamless liner
Black palm sandy over full blue smooth finish
NBR crotch reinforcement


Crotch reinforcement

EN 388:2016 + A1:2018

4131X

CE

PS5NPT

NEW

Black over green dual coated NBR gloves
15G blue polyester seamless liner
Black palm sandy over full green smooth finish

EN 388:2016 + A1:2018

4121X

N33VDK

NEW

Black over blue dual coated NBR gloves
13G grey nylon seamless liner
Black PVC dotted palm sandy over 3/4th blue smooth finish


Anti-slip

EN 388:2016 + A1:2018

4121X

P35NHK

Black over blue dual coated NBR gloves
15G grey polyester seamless liner
Black palm sandy over 3/4th blue smooth finish

EN 388:2016 + A1:2018

4131X

CE

Available in size 7 to 11

M35NBV

Black palm Foamyflex® coated NBR gloves
15G nylon and spandex blended seamless liner
Light coating with foam finish


Foam Finish

EN 388:2016 + A1:2018

4131X

CE

P35NBD

Black palm coated NBR gloves
15G polyester seamless liner
Light coating with foam finish

EN 388:2016 + A1:2018

4121X

CE

P85NAG

Blue palm seamless coated NBR gloves
15G orange polyester liner
Palm coating with sandy finish

EN 388:2016 + A1:2018

4121X

CE

K63NBG

Black palm coated performance NBR gloves
13G para-aramid seamless liner
Tear & abrasion resistant
Palm coating with sandy finish

EN 388:2016 + A1:2018

4342X

Available in size 7 to 11

V55NGA

Grey palm coated NBR gloves
15G black recycled polyester seamless liner
Palm coated smooth finishing

EN 388:2016 + A1:2018
4121X

V35NBG

Black palm coated NBR gloves
15G grey recycled polyester seamless liner
Palm coated sandy finishing

EN 388:2016 + A1:2018
4121X

V35NBD

Black palm coated NBR gloves
15G grey recycled polyester seamless liner
Palm coated foamy finishing

EN 388:2016 + A1:2018
4121X

V35NBA

Black palm coated NBR gloves
15G grey recycled polyester seamless liner
Palm coated smooth finishing

EN 388:2016 + A1:2018
4121X

Available in size 7 to 11

D33NGD

Cut resistant seamless NBR coated glove
13G Dyneema® yarn knitted liner
Grey palm foam finish over grey shell
Split leather crotch reinforcement


Crotch Reinforcement

EN 388:2016 + A1:2018
4X42D

D45NBG

Cut resistant seamless NBR coated glove
15G Dyneema® & fiberglass blended liner
Black palm sandy finish over blue shell

EN 388:2016 + A1:2018
4X42D

D45NFK

Cut resistant seamless NBR coated glove
15G Dyneema® blue melange liner
Black palm sandy over grey smooth finish

EN 388:2016 + A1:2018
4X42D

D45NHK

Cut resistant seamless NBR coated glove
15G Dyneema® & glass blended liner
Black palm sandy over blue smooth finish

EN 388:2016 + A1:2018
4X42D

Available in size 7 to 11

E43NBG

Cut resistant seamless NBR coated glove
13G HPPE & steel blended liner
Royal blue palm sandy finish over black shell

NEW

Fiberglass &
steel blend

Sandy
finish

TDM Cut
Level E

ANSI/ISEA CUT LEVEL A5

EN 388:2016 +
A1:2018
4542E

Available in size 7 to 11

H33NBG

Cut resistant seamless NBR coated glove
13G UHWMPE & fiberglass blended liner
Black palm sandy coating on grey shell

EN 388:2016 + A1:2018
4542C
CE

F33NBG

Cut resistant seamless NBR coated glove
13G UHWMPE & spandex blended liner
Black palm sandy coating on grey shell

EN 388:2016 + A1:2018
4341X
CE

H33NHK

Cut resistant seamless NBR coated glove
13G UHWMPE & fiberglass blended grey liner
Black palm sandy over 3/4th blue smooth coating

EN 388:2016 + A1:2018
4541C
CE

H33NMK

Cut resistant seamless NBR coated glove
13G UHWMPE & fiberglass blended grey liner
Black palm sandy over 3/4th red smooth coating

EN 388:2016 + A1:2018
4542C

Available in size 7 to 11

L83NBG

Cut resistant seamless NBR coated glove
13G UHWMPE and fiberglass blended liner
Black palm sandy finish over orange shell

EN 388:2016 + A1:2018
4542C

T35NBG

Seamless 15 gauge highcut resistant nitrile gloves
Fiberglass and filament steel blended HPPE liner
Palm coated black sandy finishing
Polypropylne overlock binding

EN 388:2016 + A1:2018
4542D
ANSI/ISEA CUT LEVEL A4
D
Cut Level D

E33NBG

Cut resistant seamless NBR coated glove
13G HPPE & steel blended liner
Black palm sandy finish over grey shell

EN 388:2016 + A1:2018
4542D
D
Cut Level D
CE

G63NBG

Cut resistant seamless NBR coated glove
13G UHWMPE and fiberglass blended liner
Black palm sandy finish over hi-vis green shell

EN 388:2016 + A1:2018
4542C
Low Visibility
C
Cut Level C

Available in size 7 to 11

H33TDL

Impact and cut resistant NBR coated glove
13G UHWMPE & fiberglass blended seamlees liner
Flexible m-Karpals Protect® patch back
Black palm sandy finish over grey shell with nitrile crotch reinforcement

EN 388:2016 +
A1:2018
4542CP

CE

LR3TDL

Impact and cut resistant NBR coated glove
13G UHWMPE & fiberglass blended seamlees liner
Flexible m-Karpals Protect® patch back
Black palm sandy finish over lemon yellow shell with velcro cuff

EN 388:2016 +
A1:2018
4542CP

L83TDL

Impact and cut resistant NBR coated glove
13G UHWMPE & fiberglass blended seamlees liner
Flexible m-Karpals Protect® patch back
Black palm sandy finish over orange shell with velcro cuff

EN 388:2016 +
A1:2018
4542CP

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 388:2016 +
A1:2018
4121XP

Available in size 7 to 11

W63NAG

Thermal NBR coated seamless gloves
15G polyester shell with acrylic lining
Blue sandy palm coating over hi-vis yellow

Acrylic liner

Hi-vis liner

Thermal gloves

Contact cold insulation

EN 388:2016 + A1:2018
4242X

EN 511
X2X

Available in size 8 to 11

W43NBG

Thermal NBR coated seamless gloves
15G polyester shell with acrylic lining
Black sandy palm coating over blue

EN 388:2016 + A1:2018
4242X

EN 511
X2X

W83NBG

Thermal NBR coated seamless gloves
15G polyester shell with acrylic lining
Black sandy palm coating over orange

EN 388:2016 + A1:2018
4242X

EN 511
X2X

W33NRG

Thermal NBR coated seamless gloves
15G polyester shell with acrylic lining
Orange sandy palm coating over grey

EN 388:2016 + A1:2018
4242X

EN 511
X2X

Available in size 8 to 11 | -20°C contact cold resistant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KW1277B

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

EN 388:2016 + A1:2018
2441C

EN 407:2020
423X3X

EN 12477:2001+A1:2005
TYPE A

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 is available in cuff

EN 388:2016 + A1:2018
2441C

EN 407:2020
423X3X

EN 12477:2001+A1:2005
TYPE A

KD4377B

Heat and flame resistant welder glove
480GSM woven para-aramid construction
Cotton lining & 15cm natural split leather cuff

EN 388:2016 + A1:2018
2441C

EN 407:2020
423X3X

EN 12477:2001+A1:2005
TYPE A

Available in size 7 to 11 | 200°C contact heat resistant

KP07

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

EN 388:2016 + A1:2018
234XX

K007D/K010D

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

EN 388:2016 + A1:2018
134XX

KCL

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

EN 388:2016 + A1:2018
234XX

EN 407:2020
423XXX

Available in size 7 to 11

KARMSLV

Seamless arm sleeve with thumb hole
100% Para-aramid knitted yarn
Mechanical hazard resistant arm sleeve
250°C for 15 sec.

EN 388:2016 +A1:2018
2334C

EN 407:2004
X2XXXX

CE

CARMSLV

Seamless arm sleeve with thumb hole
100% cotton knitted yarn
Provides good comfort to the user

EN 388:2016 + A1:2018
1X2XX

LARMSLV

Leather arm sleeve
100% split leather
Velcro adjustment with side lock arrangement

EN 388:2016 + A1:2018
2122X

Available in size 6 to 11

ARMOREX

Cut resistant seamless arm sleeve
13G UHWMPE and fiberglass belnded yarn
Velcro adjustment option available

EN 388:2016 +
A1:2018

454XC

GARMSLV

Cut resistant seamless arm sleeve
13G UHWMPE and fiberglass belnded yarn
Elasticized closure at both ends

EN 388:2016 +
A1:2018

454XC

PARMSLV

Seamless arm sleeve
13G 100% polyester knitted yarn
Open elbow for flexibility

EN 388:2016 +
A1:2018

1X2XX

Available in size 6 to 11

F65G5

Cut resistant seamless knitted glove
15G HPPE blue liner
Achieved blade cut resistance level 5

EN 388:2016 + A1:2018

434XB

H33G5

Cut resistant seamless knitted glove
13G UHWMPE & fiberglass blended liner
Achieved blade cut resistance level 5

EN 388:2016 + A1:2018

454XC

Cut Level C

P151A

Electrical conductive seamless knitted glove
15G 100% polyester knitted white liner
Carbon fiber treated thumb, index and middle fingertip

EN 388:2016 + A1:2018

101XX

P153S

Seamless knitted antislip gloves
15G 100% polyester knitted grey liner
Ribbed finish for anti slip properties

EN 388:2016 + A1:2018

101XX

Available in size 6 to 11

PL010

Cut resistant leather patch seamless glove
10G nylon & para-aramid blended shell
Reinforced palm with split leather patch

EN 388:2016 + A1:2018
4543C
C
Cut Level C

HL010

Cut resistant leather patch seamless glove
10G UHWMPE & fiberglass blended shell
Reinforced palm with split leather patch

EN 388:2016 + A1:2018
4543C
C
Cut Level C

FL010

Cut resistant leather patch seamless glove
10G UHWMPE & spandex blended shell
Reinforced palm with split leather patch

EN 388:2016 + A1:2018
4543C
C
Cut Level C

KL010

Cut resistant leather patch seamless glove
10G 100% para-aramid knitted shell
Reinforced palm with split leather patch

EN 388:2016 + A1:2018
4543C

Available in size 6 to 11

MACH 11

NEW

Multi utility mechanical gloves
Honeycomb shaped reinforcement for slip resistance
Foam padding for vibration resistance
Retro reflective fingertip for visibility
Stretch fabric and elasticized wrist

EN 388:2016 + A1:2018
2121X

MACH 12

NEW

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
Stretch fabric and elasticized wrist

EN 388:2016 + A1:2018
2121X


Reflective finger tip

MACH 21

NEW

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 388:2016 + A1:2018
2121X

MACH 22

NEW

Multi utility mechanical gloves
Flexible impact resistant fingers and knuckles
Honeycomb shaped reinforcement for slip resistance
Foam padding for slip and vibration resistance
Stretchable fabric and elasticized wrist for dexterity

EN 388:2016 + A1:2018
2121X


Flexible impact protection

Available in size 8 to 10

MACH 31

NEW

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


Pull tab

EN 388:2016 + A1:2018
2121X

MACH 32

NEW

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


Wipe friendly fabric

EN 388:2016 + A1:2018
2121X

MACH 42

NEW

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 elasticized wrist for dexterity


Hi-vis fabric

EN 388:2016 + A1:2018
4542C
Cut Level C
360° WT

MACH 43

NEW

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 elasticized wrist for dexterity
Flexible impact resistant fingers and knuckles


Comfort padding

EN 388:2016 + A1:2018
4542C
Cut Level C
180° WT

Available in size 8 to 10

D232

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

EN 388:2016 + A1:2018
2122X

D436

4 tips beige grain leather driver gloves
Wing thumb and adjustable leather fastner
Synthetic coloured binding taped cuff

EN 388:2016 + A1:2018
2122X


Buckle fastener

D662

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

EN 388:2016 + A1:2018
3132X

D762

Yellow grain and split driver glove
Winged thumb and elasticized back
Synthetic coloured binding taped cuff

EN 388:2016 + A1:2018
2122X

Available in size 7 to 11

D591

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

EN 388:2016 + A1:2018
3133X
CE

D434

Beige unlined leather driver gloves
Keystone thumb and elasticized back
Self hemmed cuff

EN 388:2016 + A1:2018
2122X
CE

D333

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

EN 388:2016 + A1:2018
2122X

D204

Natural grain leather driver glove
Cotton knitted fabric back
Knitted elastic cuff and winged thumb

EN 388:2016 + A1:2018
2122X

Available in size 7 to 11


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D809

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

EN 388:2016 +
A1:2018
2122X

D491

NEW

Yellow cow grain driver gloves
Full red fleece lining and winged thumb
Elasticized back with colour binding taped cuff

Fleece Inside

EN 388:2016 +
A1:2018
2122X

D464

NEW

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

Hi-vis fingertip

EN 388:2016 +
A1:2018
2122X

Available in size 7 to 11

D116

Reinforced water repellent grain driver gloves
Leather reinfoncement on palm
Elasticized rib with leather pulse patch


Pulse
Patch

EN 388:2016 +
A1:2018
2122X

D132

Water and oil relellent khaki grain driver gloves
4 tips and winged thumb
Elasticized rib with leather pulse patch

EN 388:2016 +
A1:2018
2122X

D142

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

EN 388:2016 +
A1:2018
2122X

D120

Water and oil repellent leather driver gloves
Reverse grain in palm and grain back
Winged thumb and elasticized back
Synthetic coloured binding taped cuff

EN 388:2016 +
A1:2018
2122X

Available in size 7 to 11

BE22J1

Cut resistant natural grain driver glove
Steel filament blended para aramid lining
Custom impact resistor padding
Elasticised coloured binding tape stitched

Comfort cut liner

NEW

Coloured binding

Cut Level F

ANSI ISEA Cut Level A6

EN 388:2016 + A1:2018
3543F

Available in size 7 to 11

ME2871

Cut & heat resistant grain driver gloves
High cut & heat resistant lining
Keystone thumb and elasticised back
Synthetic coloured binded cuff

EN 388:2016 + A1:2018
2542C
C
Cut Level C

BE2251

NEW

Cut & impact resistant natural grain driver glove
Steel filament blended para aramid lining
Custom impact resistor padding
Elasticised coloured binding tape stitched

EN 388:2016 + A1:2018
3532E
E
Cut Level E

BE2291

NEW

High cut resistant natural grain driver glove
Fibre glass blended HPPE knitted lining
Winged thumb and velcro fastener
Synthetic coloured binded cuff

EN 388:2016 + A1:2018
2542X

Available in size 7 to 11

C542

Natural split canadian glove
Blue cotton drill back and cotton lining
Rubberised cuff and knuckle reinforcement

EN 388:2016 +
A1:2018
3132X

C232R

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

EN 388:2016 +
A1:2018
3132X

C853

Reinforced split leather canadian glove
Blue cotton drill back and cotton lining
Rubberised cuff and reinforcement over palm & index

EN 388:2016 +
A1:2018
4344X

C231

Natural grain canadian leather gloves
Cotton lining and leather knuckle reinfrocement
Canvas cuff with coloured binding tape

EN 388:2016 +
A1:2018
3132X

Available in size 7 to 11

C332

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

EN 388:2016 + A1:2018
3132X

C042

Yellow grain canadian leather gloves
Knuckle leather reinforcement
Rubberised cuff with coloured binding tape

EN 388:2016 + A1:2018
3132X

C834JNS

Reinforced natural split canadian leather gloves
Cotton lining inside and jeans fabric back
Rubberised cuff with coloured binding tape

EN 388:2016 + A1:2018
3132X

C864

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

EN 388:2016 + A1:2018
4344X

Available in size 7 to 11

C251

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

EN 388:2016 + A1:2018
3132X

C966

Natural grain canadian leather gloves
Cotton lining and hi-vis drill fabric back
Rubberised cuff with coloured binding tape

EN 388:2016 + A1:2018
3132X


Hi-Vis

C242

Natural grain canadian leather gloves
Cotton drill fabric and knuckle reinforcement
Rubberised cuff with coloured binding tape

EN 388:2016 + A1:2018
3132X

C265

Natural grain canadian leather gloves
Cotton striped drill fabric and knuckle reinforcement
Rubberised cuff with coloured binding tape

EN 388:2016 + A1:2018
3132X

Available in size 7 to 11

C297

NEW

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

EN 388:2016 + A1:2018

3132X

C738

NEW

Dyed royal blue split canadian leather gloves
Cotton lining and knuckle reinforcement
Rubberised cuff with coloured binding tape

EN 388:2016 + A1:2018

3132X

C278R

NEW

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

EN 388:2016 + A1:2018

3132X

C261

NEW

Dyed brown grain extended canadian gloves
Paraaramid stitched and keystone thumbed
Extended rubberised cuff

EN 388:2016 + A1:2018

3132X

Available in size 7 to 11

E223

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

EN 388:2016 +
A1:2018
3132X

E324

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

EN 388:2016 +
A1:2018
2122X

E332

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

EN 388:2016 +
A1:2018
3132X

E755

Natural grain insulated canadian gloves
Polyfill lining and cotton drill fabric back
Knitted wrist and leather knuckle reinforcement

EN 388:2016 +
A1:2018
3132X

Available in size 7 to 11

M464

Soft grain leather general work glove
Leather finger tips and thumb
Black stretch fabric back
Rubberized cuff with coloured binding

Stretch fabric

EN 388:2016 + A1:2018

3132X

M354

Soft grain leather general work glove
Leather finger tips, knuckles and thumb
Green stretch fabric back
Rubberized cuff with coloured binding

EN 388:2016 + A1:2018

3122X

M254

Natural grain leather general work glove
Leather palm, finger tips and thumb
Black cotton fabric back
Elasticated cuff with branded velcro adjustor


Velcro

EN 388:2016 + A1:2018

3122X

M659DP

NEW

Natural grain general work glove
Reinforced leather palm and thumb
Mesh fabric back with velcro fastening,
Elasticated cuff with branded velcro adjustor


Leather pulm reinforcement

EN 388:2016 + A1:2018

3122X

Available in size 7 to 11

F214

Natural grain welder glove
15 cm split cuff
Heat resistant

EN 388:2016+A1:2018
3243X

EN 407:2020
413X4X

EN 12477:2001+A1:2005
TYPE A

F224

Natural grain welder glove
15 cm split cuff
Heat resistant

EN 388:2016+A1:2018
2122X

EN 407:2020
413X4X

EN 12477:2001+A1:2005
TYPE A

F234

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

EN 388:2016+A1:2018
3243X

EN 407:2020
413X4X

EN 12477:2001+A1:2005
TYPE A

F571

NEW

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

Buckle closure

EN 388:2016+A1:2018
3132X

EN 407:2020
413X4X

Available in size 9 to 11

F290D

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

EN 388:2016+A1:2018
2133X

EN 407:2020
413X4X

F522DP

Natural split leather welder glove
7cm split leather cuff
Reinforced palm and heat resistant

200°C
15 SECS

EN 388:2016+A1:2018
4244X

EN 407:2020
423X4X

F962

Natural split leather mittens
Canvas lining inside
Keystone reinforced thumb


Thumb reinforcement

EN 388:2016+A1:2018
2133X

EN 407:2020
413X4X

F687

Dyed all split red leather welder glove
Cotton canvas lined
Grey split leather palm, knuckle and vein reinforcement

EN 388:2016+A1:2018
4244X

EN 407:2020
423X4X

EN 12477:2001+A1:2005
TYPE A

Available in size 9 to 11

F121

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

NEW

15cm cuff

350°C
15 SECS

EN 388:2016+ A1:2018	EN 407:2020	EN 12477 2001 + A1:2005
2232X	433X4X	Type A

Available in size 9 to 11

F437

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

100°C
15 SECS

EN 388:2016+A1:2018
4133X

EN 407:2020
413X4X

EN 12477:2001+A1:2005
TYPE A

F637

Dyed green split leather welder glove
Back and thumb made from single piece leather
Reinforcement on the thumb and cuff

EN 388:2016+A1:2018
4133X

EN 407:2020
413X4X

EN 12477:2001+A1:2005
TYPE A

F834

Dyed yellow split leather welder glove
Leather palm reinforcement
Lined with non-woven palm and jeans cuff

350°C
15 SECS

EN 388:2016+A1:2018
4244X

EN 407:2020
433X4X

EN 12477:2001+A1:2005
TYPE A

F667

Dyed blue split leather welder gloves
Split leather palm and knuckle reinforcement
Lined with cotton canvas

250°C
15 SECS

EN 388:2016+A1:2018
4244X

EN 407:2020
423X4X

EN 12477:2001+A1:2005
TYPE A

Available in size 9 to 11

F272

NEW

Beige three tip leather welder gloves
Cotton fleece lined palm
12cm canvas lined split cuff

EN 388:2016+A1:2018
2133X

EN 407:2020
413X4X

EN 12477:2001+A1:2005
TYPE A

F572

NEW

Natural grain leather welder glove
Full lined para aramid sewn gloves
15cm black split cuff with hemming

EN 388:2016+A1:2018
3132X

TF292

NEW

Imapct resistant natural grain welder glove
Cotton fleece palm lning and back split
15cm canavas lined split cuff

EN 388:2016+A1:2018
2122XP

EN 407:2020
413X4X

EN 12477:2001+A1:2005
TYPE A

F426DP

NEW

Full grain leather welder glove
Reinforced leather palm and split back
Cotton fleece lined palm and canvas lined cuff

EN 388:2016+A1:2018
4133X

EN 407:2020
413X4X

EN 12477:2001+A1:2005
TYPE A

Available in size 9 to 11

H044K

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

100°C
15 SECS

EN 388:2016+A1:2018 3243X
EN 407:2020 413X4X
EN 12477:2001+A1:2005 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

EN 388:2016+A1:2018 3243X
EN 407:2020 413X4X
EN 12477:2001+A1:2005 TYPE A

H544K

Fire and heat resistant welder glove
Lining in 100% wool Sewn para-aramid thread
Heat resistant

100°C
15 SECS

EN 388:2016+A1:2018 4133X
EN 407:2020 413X4X
EN 511:2006 11X
EN 12477:2001+A1:2005 TYPE A

HAMK

Fire and heat resistant welder glove
Aluminized preox fabric back and thumb
Sewn with para-aramid thread
100% wool lining for heat resistance

100°C
15 SECS

EN 388:2016+A1:2018 4133X
EN 407:2020 413X4X
EN 12477:2001+A1:2005 TYPE A

Available in size 9 to 11

H468

Water repellent full grain leather welder glove
Excellent for use in a cold and abrasive environment
Aluminium sheet lining insert
20 cm split leather cuff with adjustable velcro
Para-aramid stitched glove for heat resistance

500°C
15 SECS


Velcro adjuster

EN 388:2016+A1:2018
2123X

EN 407:2020
443X4X

EN 12477:2001+A1:2005
TYPE A

Available in size 9 to 11

KD4377A

600GSM heat and flame resistant welder glove
Para-aramid woven with non woven lining
15cm natural split leather cuff

250°C
15 SECS

EN 388:2016+A1:2018

2441C

EN 407:2020

423X3X

EN 12477:2001+A1:2005
TYPE A

KW4377A

600GSM heat and flame resistant welder glove
Para-aramid woven with cotton non woven lining
15cm para-aramid cuff

250°C
15 SECS

EN 388:2016+A1:2018

2441C

EN 407:2020

432X3X

EN 12477:2001+A1:2005
TYPE A

KWL15

Para-aramid palm leather welder glove
Knit acrylic fabric lined and para-aramid sewn
15cm heat resistant split cuff

250°C
15 SECS

EN 388:2016+A1:2018

2542X

EN 407:2020

423X4X

EN 12477:2001+A1:2005
TYPE A

KWS15

Mitten style fully insulated welder glove
Para-aramid lined for high-temperature resistance
Soft split leather cuff from flame and contact heat

250°C
15 SECS

EN 388:2016+A1:2018

2542X

EN 407:2020

423X4X

Available in size 9 to 11

SLHE01

100% natural split leather welder hood
Front velcro closure covers head and neck
Available in grain leather also
180°C contact heat

EN 11611:2015

Class 2 A1

SLJB01

Leather welder jacket in 100% natural grain
Sewn with para-aramid thread
Velcro fastening on the front placket
Available in different leather and fabric combination
180°C contact heat

EN 11611:2015

Class 2 A1

SLT01

Leather welder trouser in 100% natural grain
Sewn with para-aramid thread
Metallic stud button for fly closure
Available in different leather and fabric combination
180°C contact heat

EN 11611:2015

Class 2 A1

Universal sizing | Customisation available

SLGE01

100% natural grain leather leg guards
Velcro fastening to ensure proper grip
Available in split leather also

EN 11611:2015

Class 2 A1

SLAS01

100% split leather welder apron
Leather belts and string for comfortable wear

EN 11611:2015

Class 2 A1

Tool Bag

100% natural grain leather welder tool bag
Multi pockets tool bag for manifold applications

Universal sizing | Customisation available

Body Protection

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


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OSLO

Composition: 65% polyester 35% cotton 210 GSM

Long coat with long sleeve with snap button
Two reinforced bottom pockets
One chest pocket with pen holder

LUBECK

Composition: 65% polyester 35% cotton 245 GSM

Trouser with two pleats and welt pockets and side one pocket
Trousers with elasticised waistband along
with the provision of a belt
One side pocket on each side

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

BREMEN

Composition: 65% polyester 35% cotton 210 GSM

Long coat with short sleeve with snap button
No pockets are available

TRIER

Composition: 65% polyester 35% cotton 210 GSM

Short coat with long sleeve with snap button
Two patch pockets with button closure
One chest pocket with a penholder

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

CHEMNITZ

Composition: 100% cotton denim, 10oz Water repellant

Hospitality apron
100cm faux leather ties and neckband with metal buckle adjuster
Contrast jeans stitching with functional features
including patch pocket and cloth holder

GENEVA

Composition: 100% cotton 210 GSM

Chef Jacket with pop buttons
Both way buttons
Round mandarin collar and french style cuff
An additional set of buttons in white colour

ZURICH

Composition: 100% cotton 210 GSM

Navy blue and white yarn died chef pant
Elasticized waist
Two front belt loops and three back belt loops
Two side pockets and one back pocket

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

GRAZ-T

Composition: 65% polyester 35% cotton 160 GSM

White colour female tunic with blue piping
Two reinforced down pockets on each side
Central front closure with snap button

GRAZ-P

Composition: 65% polyester 35% cotton 160 GSM

Elasticized pant
One side pocket on each side
Back waist belt with elastic
Front closure with zip

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

SEVNICA

Composition: Twill 50% Polyester 50% Cotton 180 GSM

Hospitality tunic for women
Mandarin collar
Asymmetric button closure to front
Back pleat and side vents
Machine washable

RONDA

Composition: Twill 50% Recycled Polyester, 50% BCI cotton, 210 GSM

Tunic with officer collar
Central closure by hidden grippers
Short sleeves
Chest pocket – Watch or beeper holder
Back bending clips – Side slits

BCI Better Cotton Initiative www.bettercotton.org

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

LUGO

Composition: Twill 50% Polyester 50% Cotton, 180 GSM

Tunic for women
A "wrap around" closure with grippers
Chest pocket for pens or beep holder
Two lower pockets
Contrasting bias finish on neckline

TRAUN

Composition: Twill, 50% Polyester, 50% Cotton 180 GSM

Medical unisex trousers
Elasticated waist and draw cord
Bottom hem of trousers with snap button

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

FLORIAD

Composition: Twill, 65% Cotton 35% Polyester, 240GSM

Work coverall with zip closure
Elasticized waist tightening cuff
Closed by buttons
1 sleeve pocket on left side
One mobile pocket in contrast colour
Left chest pocket with gusset and flap
Front closure by zip
Accessories holder at back
Underarm ventilation eyelet


Zip closing


Mobile pocket


Elasticized back


Buttoned cuff

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

KOLDING

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

Jacket with zip closure
Front opening by zip, shirt collar jacket
Two chest pockets
Sleeve tightening with ABS buttons

NORD

Composition: Twill, 65% Cotton 35% Polyester 240GSM

Trouser with zip closure
Inside elasticized back and sliding tab 5 belt loops
One pleat at the front on both the sides
One back pocket with rule pocket
Front closure by fly-with-zip

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

GOTLAND

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

Bi-coloured coverall
Elasticized back waist tightening
Underarm ventilation eyelets on sleeves
Perforated elbows and knees
6 pockets in total


Buttoned pockets


Elasticized back


Accessories holder


Zip front closer

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

ESBERG

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

Bi-coloured jacket
Elasticized waist tightening on sides
Preformed elbows
5 pockets

BERGEN

Composition: Twill, 65% polyester 35% cotton 240 GSM
Bi-coloured trouser
Elasticized waist tightening on sides
4 pockets

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

NAPLES

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

Bi-coloured coverall with strap adjuster cuffs
Two deep waist pockets with strap closure
Knee pad pockets, rear pockets and leg bottoms reinforced in 600D Oxford reinforcements with 100% Polyester PU coating, 250 GSM
Tearproof crotch and higher waisted rear for increased back protection

BORUSSIA

Composition: Matty, 64% cotton 34% polyester 2% elastane 250 GSM

Stretch Slim Fit Work Overalls
Stretch shoulder straps
Knee pad in Cordura®
Large chest pocket with strap closure

EN 14404+A1:2012

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

PALMA

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

Bicoloured work jacket with cuff adjusters
Inserts in 600D Oxford reinforcements with 100% Polyester PU coating, 250 GSM
Chest pockets with strap closure
Pen pocket and badge insert
Two deep waist pockets with strap closure

TOLEDO

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

Slim cut bicolour work trouser
Knee pad pockets, rear pockets and leg bottoms Reinforced in 600D Oxford reinforcements with 100% Polyester PU coating, 250 GSM
Tearproof crotch and higher waisted rear for increased back protection

EN 14404+A1:2010

DUNKIRK

Composition: Ripstop, 93% nylon, 7% elastane, 260 GSM

Multipocket work trousers
Knee pad pockets, rear pockets and leg bottoms Reinforced in 600D Oxford reinforcements with 100% Polyester PU coating, 250 GSM
Tearproof crotch and higher waisted rear for increased back protection

EN 14404+A1:2010

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

DRESDEN

Composition Denim 98% cotton 2% elastane 10oz

Durable stretch trousers with low crotch and tapered legs
Cordura® reinforced knee pockets
Designed to be worn low on the waist
For optimal ability to move and great comfort, the trousers have stretch panels in the crotch and on the calves

EN 14404+A1:2010

BELGRADE

Composition Matty 100% cotton 300 GSM

Cotton Durable Work Pants
Adjustable kneepads and reinforced utility pockets for maximum comfort
CORDURA® inforced nail pockets with tool holders

EN 14404+A1:2010

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

VENICE

Composition: Matty 100% Cotton 330 GSM,

Lined jacket
High collar with zipper, extended back with press studs

TALINN

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

Heavy duty work shorts
CORDURA® reinforced nail pockets
Back pockets, ruler pocket, leg pockets and thighs pocket

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

DUBLIN

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

Heavy weight cotton bib & brace coverall
Wide braces with strong elastic and quick-release buckle
Knee protection pockets
Back pockets with bellow. Loose-hanging chest pockets
CORDURA® reinforced knees and back pockets

EN 14404+A1:2010

COMO

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

Heavyweight cotton Sleeveless Coveralls
Loose-hanging chest pockets
Knife holder
Bellowed front pockets
Cordura® reinforced knees and back pockets

EN 14404+A1:2010

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

HALLE

Composition Twill 65% Polyester 35% cotton 320-350 GSM

Waistcoat With Zip
Reinforced nail pockets
Loose-hanging chest pockets with safety straps
Extended back
Holster Pocket

POTSDAM

Composition Dobby 93% polyamide,
7% elastane, water repellent finish 290 GSM

Heavy duty work trouser
CORDURA®-stretch knee pad pockets
Holster pockets
Mesh insert at the back of the knees

EN 14404+A1:2010

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

ZARAGOZA

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

Wide braces with strong elastic and quick-release buckle
CORDURA® reinforced front pockets, back pockets, ruler pocket, knees and hem
Back pocket with bellow
Chest pocket with flap and pen pocket
Extra wide CORDURA®-reinforced ruler pocket with pen pocket, knife holder and extra pocket


Front pocket


Knee pads


Buckle release


Hook

Global Recycled Standard

EN 14404+A1:2010

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

Colour, design & fabric are customisable | Available in size S to XXL

ALMERIA

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

Trouser with stretch panel in the crotch, on the knee and back

CORDURA® reinforced front pockets, back pockets, ruler pocket, knees and hem

Leg pockets with bellow, zipper, pen pocket and knife pocket

Extension feature at bottom

Global Recycled Standard

EN 14404+A1:2010

VAXJO

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

Work shorts have been designed with care, like back pockets with CORDURA® reinforcements

Extra wide CORDURA®-reinforced ruler pocket with pen pocket, knife holder and extra pocket

Global Recycled Standard

Colour, design & fabric are customisable | Available in size S to XXL


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BELLARUS

Composition: Twill 98% Cotton, 2% Antistatic 330 GSM

Flame Retardant anti-static coverall
Protection against radiant
Flame resistant industrial wash tape
Two tier knee pad pockets
Two-way zip for quick and easy access


2 way zip


Reflective tape

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

LISBON

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

Insulated FR parka with button and zip closure fastener
Two slant chest pockets with metal zipper closure covered by flap
Two hip pockets with hidden snap button fastener covered by flap and a patch pocket at left sleeve
FR reflective tape is used around the sleeve

OEKO-TEX® STANDARD 100

NFPA 2112

KINGSTON

Composition: Twill, 85% Cotton, 14% Polyester,
1% antistatic, 350 GSM

Durable anti-flame overall with practical pockets and robust hidden one-way metal zipper
Bellowed back panel and pre-bent elbows for improved comfort
Adjustable sleeve end with velcro
Reflective details providing increased visibility.
Industrially washable

EN11611:2015 EN11612:2015 EN14404:2010

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

BEACON

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

Top-quality flame retardant and non-metal work shirt with exceptional protective properties

Chest pocket with flap and covererd push buttons, one pocket with pen opening

Adjustable sleeve end with hidden push buttons in plastic

EN11611:2015 EN11612:2015

LORIENT

Compsition : Twill 80% Cotton, 19% Polyester, 1% Antistatic 310 GSM

Ideal work trousers with high comfort to work in exposed environments

Stretch panel in crotch and backside

Pre-bent knees

Reinforced ruler pocket

Flame retardant reflective tapes sewn with double seams

EN11611:2015 EN11612:2015 EN14404:+A2010

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

FULTON

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

HI VIS Shell Jacket

Fleece lined collar

Removable and adjustable hood that can be concealed in collar

Adjustable sleeve end with velcro

EN11611:2015 EN11612:2015

OLEAN

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

Bib trousers in inherent flame-retardant fabric

CORDURA® reinforced knee pockets

Smart pocket solutions and elastic braces for even better comfort

EN11611:2015 EN11612:2015 EN14404:2010

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

PARIS

Composition: Twill 98% cotton 2% Antistatic 270 GSM

Bi-coloured flame retardant coverall
Covered plastic press snap front closure
Cargo patch pocket covered with flap and hidden ruler pocket
Underarm and action back panel ventilation, 3 openings
Back hip patch pocket with pocket flap closure
2-way zipper in chest with velcro closure
Flame retardant striped reflective tape as per norms
Velcro closure in arm sleeves

Striped reflective tape

2-way zipper and velcro

Side pocket with velcro

Velcro closed cuff

EN11611:2015 EN11612:2015

OEKO-TEX® STANDARD 100

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

CELGIC

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

Flame retardant bi-coloured jacket
Protection against radiant, convective and contact heat
Chest pockets with stud flap closure
Adjustable cuffs for a secure fit
Concealed stud front for easy access

EN11611:2015 EN11612:2015

PIRAN

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

Flame retardant anti-static, arc flash trousers
Belt loop part elastic waisband
Rear patch pocket with hook and loop closure flap
Large bellows pocket to each leg with hook and loop closure flap

EN11611:2015 EN11612:2015 EN14404:2010

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

PROCLO K383

Composition: 130 GSM plain 100% polyester

Protective hi-vis vest
50 mm reflective tape is available on bothside of shoulder and in chest area
ID card holder & velcro adjsuted fron chest pocket
Black piping and front zip fastening system
Also avaialble in 100% recycled polyester

ID Card Holder

50mm Reflective tape

Black piping

Zip fastening

EN 20471:2013+ A1:2016

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

PROCLO N382

Composition: 130 GSM 100% polyester

Protective hi-vis vest

Single 50 mm Reflective tape is available on bothside of shoulder and in chest area

Front velcro closure

EN 20471:2013+ A1:2016

PROCLO M592

Composition: 120 GSM heavy mesh 100% Polyester fabric

Protective hi-vis vest

50 mm Reflective tape is available on bothside of shoulder and in chest area

Black piping and front velcro closure

EN 20471:2013+ A1:2016

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

JESENICE

Composition: Matty 34%Cotton, 63% Polyester, 2% Elastane, 250 GSM

Coverall with contemporary fit for workers
Made of a lightweight and durable material with stretch
Comfortable freedom of movement
Equipped with knee pockets and reflective details
Approved for industrial laundry

Stretch

Industrial Laundry approved

Multi pockets

Light weight

EN 20471:2013+ A1:2016

EN14404:2010

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

DLED

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

High vis workwear shorts
Highly elastic 4-way stretch panels for superior comfort
Dirt, oil- and water-repellent material with soft cotton inside
Soft cotton lining

EN 20471:2013+ A1:2016

RIBNICA

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

High Visibility trousers with nail and kneepad pockets
4-way stretch panels and contemporary fit
Durable comfortable cotton
Elastic stretch panels at waist

EN 20471:2013+ A1:2016

EN14404:2010

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

SEZANA

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

Water repellent, windproof and breathable jacket
High-quality reflectors
Wide hem and cufs with elasticated knitted inserts
Detachable hood which can be fixed at the front

EN 20471:2013+
A1:2016

GENK

Composition: Twill 65% Polyester 35% cotton 260 GSM

Hi-vis trousers with High-quality reflectors
Cool tool zip design
Waistband with elasticated side elements
Reinforced, functional ruler pocket and
multi-compartment thigh pocket

EN 20471:2013+
A1:2016

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

CHARLEROI

Composition: Twill 65% Polyester 35% cotton 260 GSM

Hi-vis jacket
High-quality refectors
Pleasantly elastic and breathable
Collar with zip and chin protector

EN 20471:2013+
A1:2016

SEMIC

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

Hi-vis shorts
New, fashion colour concept with striking contrasts
High-quality reflectors
Very lightweight and elastic
Breathable and fast drying

EN 20471:2013+
A1:2016

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

NANTES

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

Hi-vis Multinorm Jacket

Durable ripstop material with good tear strength to withstand the heavy-duty demands at work.

Adjustable sleeve cuff with velcro

LOMMEL

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

Hi-vis Multinorm Trouser

Hidden metal buttons

Back pockets with bellow, reinforced and flap

Leg pocket with flap and telephone pocket

Flame retardant reflective tapes sewn with double seams

CORDURA®-reinforcement on knee with pockets

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

KAMPEN

Composition : Twill 60% Modacrylic 40% Viscose 270 GSM

Multinorm Trouser

Flame retardant trousers fitted with smart pockets with good tear strength which allows the trousers to withstand tough work conditions

Back pockets with bellows, reinforcement and flaps

Flame retardant reflective tapes sewn with double seams

CORDURA®-reinforcement on knees

MAGDEBUG

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

Inherent flame-retardant Coverall

Back pleats and elasticated back for more safety and comfort

Triple-stitched seams in vulnerable areas to make the garment last even longer

Easily extend your leg with the length hem

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

DARWIN

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

Lining: 100% Polyester polyfill

Multipocket body warmer

Cloth back elasticized tightening on both sides.

Detachable sleeves

Front closed with spiral zipper concealed with flap

Fleece-lined collar for hood attachment

Ergonomically designed pockets with side slit 7 pockets

BUNBURY

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

Lining: 100% Polyester polyfill

Winter sleveeless jacket

Opening with front concealed zipper

Side elasticized waist

Contrast stitching over the jacket mobile and pen pockets at chest

AALBORG

Composition: Twill 100% cotton, 330 GSM,

Fluorescent: 85% polyester and 15% cotton

LINING: quilt fleece

Winter Jacket with pre-bent sleeves

Hi-vis details for increased visibility

Dual chest pocket and flecee lining

Arms are pre-curved and it has an extended back

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

TROMSO

Composition: Twill 100% cotton, 330 GSM

Lined Bi coloured coverall
Breathable wind & water-tight material, taped seams
Ventilation under sleeves
Inner knee protection pockets
Hidden two-way plastic zipper
Adjustable leg bottom and sleeve.

NAMSOS

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

Warm lined winter parka
Breathable wind & water-tight material, taped seams
Warm lined down-like 100% recycled fiber
Mechanical ventilation under arm
Pre-bent arms, ventilation under the arms, and two-way zippers
Reflective stripe on arm and back

STAVENGER

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

Body warmer with fleece lining and water resistant finish
Complement to jacket, hoodie or fleece
Extended back to keep the lower back warm.
One-way plastic zip
Chest pockets with flaps

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

CATANIA

Composition: CORDURA® Denim 85% Cotton, 15% Nylon, 11 Oz

Modern work waistcoat
Detachable nail pockets to reduce shoulder and neck strain.
Double zippers at the front to adjust the width
Mesh panels make the waistcoat light and provide good ventilation
CORDURA® reinforced nail pockets

FORLI

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

Durable trouser in CORDURA® denim stretch
Stretch panels in crotch and calf
Tapered legs
Knee pocket in CORDURA®

EN 14404:2010

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

MESA

Composition: CORDURA® Denim 85% Cotton, 15% Nylon, 11oz

Denim shirt with CORDURA® reinforced elbow
Wind flap with buttons
Chest pocket with zipper, bellow and flap
Inner pocket with velcro closure
Adjustable sleeve end

OMAHA

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

Shorts in Cordura® denim with stretch panels in crotch for optimal range of movement and comfort
Knife holder with button
Two loops with velcro on sides for hammer holder
Leg pocket with bellow and flap, with velcro closure and inner telephone pocket in mesh
CORDURA® reinforced nail pockets, back pockets and ruler pocket

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013


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BOHINJ

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

Women's jacket
High collar with zipper
Adjustable waistline and extended back
Chest pockets with flap and button closure
Wind flap with button
Sleeve end with inner wristlet

TERNI

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

Women's stretch trouser
Tool pockets, outside knee pockets
Stretch zones on crotch, knee, seat and calf areas
Knee protection pockets.
Leg pockets with bellow, zip, pen pocket and knife pocket
CORDURA® reinforcement on nail pockets, ruler pocket and knees

EN14404:2010

Colour, design & fabric are customisable | Available in size XS to XL | EN 13688:2013

CORDOBA

Composition: 100% Polyester, 160gsm micro mesh fabric

Hi-vis short sleeve polo shirt
Breathable micro mesh 100% polyester fabric
Moisture wicking fabric designed to keep cool and dry
Reinforced chest pocket with pen insert

PAMPLONA

Composition: 100% polyester fleece fabric. 280 GSM

Hi-vis fleece jacket
Full chest zip and reflective tapes
Elastic tape with stoppers at the waist
Fleece lining has two pockets with zipper closure
Lining same fabric as garment

SEGOVIA

Composition: 100% Polyester, 160 GSM micro mesh fabric

Hi-vis bi-coloured long sleeve polo
Moisture wicking fabric designed to help keep you cool and dry
Reinforced chest pocket with pen insert
Straight hem with side splits
Easy care fabric

MALAGA

Composition: 100% polyester soft shell fabric. 250 GSM

Softshell windcheater
Two zipped hand pockets and one chest pocket
Full-length zipper allows it to be attached to compatible jackets, available separately, as an extra warming layer
Adjustable drawstring at the lower hem

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

PROCLO-R13

Compostion: 100% polyester coated with PU, 120 GSM

Rain pant and jacket set
Front closure by zipper and secured with flap and velcro fastening
Hood with draw string adjuster
Elasticated pull on pant
Cuff and leg bottom width is elasticized
Seams are sealed with sealing tape
2 flaunt side pocket covered with flap

EN 343:2019

PROCLO-R11

Compostion: 100% polyester coated with PU, 120 GSM

Water repellent poncho with PU breathable coating
Front snap button closure
Hood with draw string adjuster
Seams are sealed with sealing tape
Snap button fastening on both ends

EN 343:2019

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

PROCLO- R14

Compostion: 100% polyester coated with PU, 120 GSM

Bi colour pant and jacket rainwear set
Two utility pockets with lateral openings
Front closure by zipper and secured with flap and Velcro
Detachable hood with draw string adjuster
Elasticated pull on pant
Leg bottom width and wrist is elasticized

EN 343:2019

PROCLO-R15

Compostion: 100% polyester coated with PU, 120 GSM

PU coated hi vis jacket and pant rainwear set
Front closure by zipper and secured with flap and velcro
Detachable hood with draw string adjuster
Elasticated pull on pant and leg bottom
Reflective tapes on jacket and trouser
Flaunt side pocket
Snap button adjusted cuff

EN 20471:2013+ A1:2016

EN 343:2019

Colour, design & fabric are customisable | Available in size S to XXL | EN 13688:2013

JD7AY

Lightweight 60 GSM Disposable coverall for infectious disease control

Coverall made of Breathable water-resistant SSMMS fabric
Elastic cuffs, waist and ankles for a better fit and freedom of movement

Cat.3

LB6JZ

Lightweight 65 GSM Disposable full sleeve apron for health care applications

Disposable Apron to protect from biohazard risk, and harmful particles
Strap fastener system

KC2GZ

Lightweight Disposable shoe cover for health care applications

40 GSM Laminated disposable Shoe
8 mm elastic closure

Universal sizing

JB8AY

Seam-sealed Lightweight 80 GSM Disposable coverall for infectious disease control

Laminated breathable material

Elastic cuffs, waist and ankles for a better fit and freedom of movement

LA2EZ

Disposable Gown to protect from biohazardous risks

Non-laminated 40 GSM, non-woven fabric

Strap fastener system closure

MP29G

Reuseable gown to protect from biohazardous risks

Coated 90 GSM woven polyester fabric with PU coating

Strap fastener system closur

Universal sizing

Feet Protection

Pioneering the manufacturing of Direct Injected Polyurethane Safety footwear, Mallcom produces sturdy shoes that can tackle challenges in construction, mining, metallurgical and other manufacturing industries. With an annual production capacity of more than a 3 million pairs, Mallcom is the leading manufacturer and distributor of certified safety shoes.


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120

BARBET 02

Waterproof Teal Nubuck Leather Upper
Moisture Wicking breathable 3D Textile Lining
200J impact resistant steel toe cap
Eva/Rubber Roc™ stuck-on sole
Size: 40-52

MALLARD 14

Waterproof Fullgrain Leather Upper
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

MALLARD 4

Waterproof crazy horse leather upper
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

Certified as per EN 20345:2022

MALLARD 8

Waterproof crazy horse leather upper
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

MALLARD 9

Waterproof crazy horse leather upper
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

MALLARD 13

Waterproof teal nubuck leather upper
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

Certified as per EN 20345:2022

INCAS 4

Dark grey suede sandals
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

INCAS 1

Synthetic suede micro fiber sandals
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

INCAS 2

Suede leather upper sandals
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

Certified as per EN 20345:2022

INCAS 3

dark grey suede
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

BARBET 06

Microfibre Upper
Moisture Wicking breathable 3D Textile Lining
200J impact resistant steel toe cap
Eva/Rubber Roc™ stuck-on sole
Size: 40-52

INCAS 05

synthetic suede micro fiber upper
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

Certified as per EN 20345:2022

INCAS 07

Waterproof Teal Nubuck Leather Upper
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Phoenix™ PU/PU
Available in Pu/Pu wiht TPU patch & Pu/Rubber
Size: 35-52

INCAS 08

Waterproof Teal Nubuck Leather Upper
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

MALLARD 18

Vicking hydro leather upper
Moisture wicking 3D mesh lining
200-joule impact-resistant steel toe cap
1100 newton impact-resistant steel plate

Certified as per EN 20345:2022

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INCAS 10

Light weight Fabric upper
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

INCAS 13

suede leather upper
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

MUFASA

Waterproof wheat nubuck leather upper
Moisture wicking breathable 3D textile lining
200J impact resistant steel toe cap
1100N impact resistant steel plate
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

Certified as per EN 20345:2022

LUPUS M03

Waterproof wheat nubuck leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
EVA/Rubber Michelin® sole
Size: 35-49

Plastic Eyelet

Padded Collar

Wheat Nubuck

Certified as per EN 20345:2022

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LUPUS M01

Synthetic suede micro fiber upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
EVA/Rubber Michelin® sole
Size: 35-49

LUPUS M02

Flyknit & TPU patch upper
Moisture wicking 3D femina lining
200 joule impact resistant steel toe cap
EVA/Rubber Michelin® sole
Size: 35-49

LUPUS M04

Flyknit upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
EVA/Rubber Vibram® sole
Size: 35-49

Certified as per EN 20345:2022

MALLARD 10

Waterproof crazy horse leather upper
Moisture wicking 3D femina lining
200 joule impact resistant steel toe cap
1100 Newton puncture resistant steel plate
Double density Griffin™ PU/Rubber
Available in PU/PU with TPU patch & PU/PU
Size: 35-52

MALLARD 11

Waterproof viking hydro leather upper
Waterproof membrane lining
200 joule impact resistant steel toe cap
1100 Newton puncture resistant steel plate
Double density Griffin™ PU/Rubber with bump cap
Available in PU/PU with TPU patch & PU/PU
Size: 35-52

ALASKA

Waterproof BSBP leather upper
Synthetic fur lining
200 joule impact resistant steel toe cap
1100 Newton puncture resistant steel plate
Double density Oliver™ PU/Rubber with bump cap
Available in PU/PU with TPU patch & PU/PU
Size: 35-48

Certified as per EN 20345:2022

MARGAY

MIcro fiber upper
Moisture wicking 3D mesh lining
200 joule impact resistant steel toe cap
1100 Newton impact resistant steel plate
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

GUINA

Waterproof Nubuck leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
1100 Newton impact resistant steel plate
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

ONTILLA

Waterproof Nubuck leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
1100 Newton impact resistant steel plate
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

Certified as per EN 20345:2022

MANX SUEDE

Suede leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

OCELOT

Waterproof suede & nubuck leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

ONCILLA 01

Waterproof crazy horse leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
1100 Newton impact resistant steel plate
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

Certified as per EN 20345:2022

CORNISH REX

Nubuck black grain leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

RUFUS K01

Waterproof breathable microfiber upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
1100 Newton impact resistant steel plate
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

LOW YORK

Suede leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

Certified as per EN 20345:2022

MALLARD 1

Waterproof crazy horse leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
1100 Newton impact resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

MALLARD 2

Waterproof crazy horse leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
1100 Newton impact resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

MALLARD3

Waterproof nubuck leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
1100 Newton impact resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

Certified as per EN 20345:2022

MALLARD 5

Waterproof nubuck leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
1100 Newton impact resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

MALLARD 7

Synthetic suede microfiber upper
Moisture Wicking 3D Femina Lining
200 joule impact resistant steel toe cap
1100 Newton puncture resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

MALLARD 12

Waterproof crazy horse leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
1100 Newton impact resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

Certified as per EN 20345:2022

MALLARD 15

Waterproof nubuck leather upper
Moisture wicking textile lining
200 joule impact resistant steel toe cap
1100 Newton impact resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

INCAS 11

Synthetic suede microfiber upper
Moisture wicking 3D spacer lining
200 joule impact resistant fiber glass toe cap
1100 Newton puncture resistant para aramid insole
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

INCAS 12

Waterproof nubuck leather upper
Moisture wicking 3D mesh lining
200 joule impact resistant fiber glass toe cap
1100 Newton puncture resistant para aramid insole
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

Certified as per EN 20345:2022

INCAS 14

Synthetic suede microfiber upper
Moisture wicking 3D spacer lining
200 joule impact resistant fiber glass toe cap
1100 Newton puncture resistant para aramid insole
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

INCAS 15

Synthetic suede microfiber upper
Moisture wicking 3D spacer lining
200 joule impact resistant fiber glass toe cap
1100 Newton puncture resistant para aramid insole
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

LYKOI

Waterproof crazy horse leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant fiber glass toe cap
1100 Newton puncture resistant para aramid insole
Double density Darwin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

Certified as per EN 20345:2022


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VIK

Waterproof crazy horse Leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
1100 Newton puncture resistant steel plate
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

VIK LITE

Waterproof crazy horse Leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
1100 Newton puncture resistant steel plate
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

VIK CLASSIC

Waterproof crazy horse leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
1100 Newton puncture resistant steel plate
Double density Griffin™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52

Certified as per EN 20345:2022

PANTHER 07

Waterproof printed leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
1100 Newton puncture resistant steel plate
Metatarsal buckle closure
Double density Oliver™ PU/Rubber
Available in PU/PU with TPU patch & PU/PU
Size: 35-48

PANTHER 08

Waterproof printed leather uper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
1100 Newton puncture resistant steel plate
Metatarsal velcro closure
Double density Oliver™ PU/Rubber
Available in PU/PU with TPU patch & PU/PU
Size: 35-48

Certified as per EN 20345:2022

MARBLE 03

Synthetic suede micro fiber & fabric upper
Moisture wicking 3D spacer lining
200 joule impact resistant fiber glass toe cap
1100 Newton puncture resistant para aramid insole
Double density Oliver™ PU/Rubber
Available in PU/PU with TPU patch & PU/PU
Size: 35-48

MARBLE 02

Waterproof crazy horse leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant fiber glass toe cap
1100 Newton puncture resistant para aramid insole
Double density Oliver™ PU/Rubber
Available in PU/PU with TPU patch & PU/PU
Size: 35-48

MARBLE 01

Waterproof crazy horse leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant fiber glass toe cap
1100 Newton puncture resistant para aramid insole
Double density Oliver™ PU/Rubber
Available in PU/PU with TPU patch & PU/PU
Size: 35-48

Certified as per EN 20345:2022

RUFUS N11

Synthetic suede micro fiber & fabric upper
Moisture wicking 3D spacer lining
200 joule impact resistant fiber glass toe cap
1100 Newton puncture resistant para aramid insole
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

PANTHER 01

Waterproof nubuck leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant fiber glass toe cap
1100 Newton puncture resistant para aramid insole
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

PANTHER 02

Waterproof nubuck leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant fiber glass toe cap
1100 Newton puncture resistant para aramid insole
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

Certified as per EN 20345:2022

MANUL 7

Desert tactical boot
Beige suede leather upper
Moisture wicking 3D textile lining
Plastic toe puff
Eva/Rubber Roc™ stuck-on sole
Size: 40-52

Half knee boot

Tail laceup

Tactical

Plastic Toe puff

CE
EN 20347

Design and colour can be customised | Certified as per EN 20347:2012

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MANUL 1

Suede leather upper
Moisture wicking 3D textile lining
Tall boot with soft toe
Eva/Rubber Roc™ stuck-on sole
Size: 40-52

MANUL 2

Suede leather upper
Moisture wicking 3D textile lining
Desert boot with soft toe
Eva/Rubber Roc™ stuck-on sole
Size: 40-52

MANUL 3

Smooth finish leather upper
Moisture wicking 3D textile lining
Tall boot with soft toe
Double density Oliver™ PU/Rubber
Size: 40-52

Certified as per EN 20347:2012

MANUL 4

Heavey duty printed leather upper
Moisture wicking 3D textile lining
Military boot with soft toe
Double density Oliver™ PU/Rubber
Size: 35-48

MANUL 5

Camouflage textile upper
Moisture wicking 3D textile lining
Desert Flecktarn boot with soft toe
Eva/Rubber Roc™ stuck-on sole
Size: 40-52

MANUL 6

Camouflage textile upper
Moisture wicking 3D textile lining
Navy boot with soft toe
Eva/Rubber Roc™ stuck-on sole
Size: 40-52

Certified as per EN 20347:2022

CYMRIC J01 OB

Black microfiber upper clogs
Moisture wicking mesh lining
Lightweight soft toe
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

CYMRIC J02 OB

Black microfiber upper sandals
Moisture wicking mesh lining
Lightweight soft toe
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

CYMRIC J03 S1

Black microfiber upper slip-ons
Moisture wicking mesh lining
Lightweight soft toe
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

Certified as per EN 20347:2022

INCAS 06

White microfiber upper slip-ons
Moisture wicking mesh lining
Lightweight soft toe and pull tab
Double density Phoenix™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-52


Pull tab


Bi-colour sole


Slip on

Certified as per EN 20347:2022

CYMRIC K01 OB

White microfiber upper clogs
Moisture wicking mesh lining
Lightweight soft toe
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

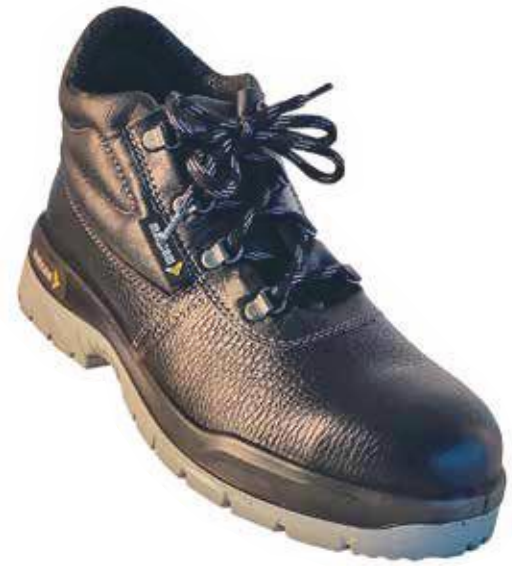
CYMRIC K02 OB

White microfiber upper sandals
Moisture wicking mesh lining
Lightweight soft toe
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

CYMRIC K03 S1

White microfiber upper slip-ons
Moisture wicking mesh lining
Lightweight soft toe
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

Certified as per EN 20347:2022



CARACAL

Waterproof printed leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
1100 Newton Puncture Resistant steel plate
Double density Darwin™ PU/PU with bump cap
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

HATRICK

Waterproof grain leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
1100 Newton Puncture Resistant steel plate
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

CHEETAH

Printed leather upper sandals
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
1100 Newton Puncture Resistant steel plate
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

Certified as per EN 20345:2022

RUFUS L01 S2

Breathable microfibre upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

RUFUS M01

Breathable microfibre upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
Double density Oliver™ PU/PU
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

MILUS

Waterproof printed leather upper
Moisture wicking 3D spacer lining
200 joule impact resistant steel toe cap
1100 Newton Puncture Resistant steel plate
Double density Oliver™ PU/PU with bump cap
Available in PU/PU with TPU patch & PU/Rubber
Size: 35-48

Certified as per EN 20345:2022

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.

B. 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.

Chinstrap - 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

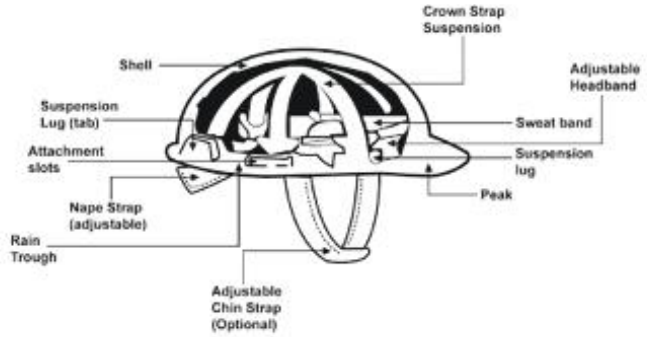
Cradle - The fixed or adjustable assembly comprising of anti-concussion tapes and nape strap, where provided.

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 397:1995 + A1:2012

Protective helmets for industry

This details physical and performance requirements, methods of test and marking requirements for general-use of industrial safety helmets. Performance requirements for the helmet shell are provided. Mandatory requirements such as shock absorption, resistance to penetration, flame resistance, chin strap anchorages, and label are addressed. Physical requirements for industrial safety helmets including materials and construction, external vertical distance. Internal vertical distance, internal vertical clearance, horizontal distance, and wearing height are included.

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.

IS 2925:1984 - Specification for Industrial Safety Helmets

This standard lays down the requirements regarding material, construction, workmanship and finish and performance requirements of helmets intended to provide protection against falling objects and other hazards which may be encountered in mining, tunnelling, quarrying, shipbuilding, construction projects and similar other industrial occupations.

EN 812:2012 - Bump caps for industry

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

AS/NZS 1801:1997 Australian/New Zealand Standard Occupational protective helmets

Objective The objective of this Standard is to specify protective helmets that are to be worn in a variety of occupations, in order to reduce the severity of head injury from hazards associated with such activities.

Classification Three types of occupational protective helmets are specified in this Standard, namely:

(a) Type 1—general industrial safety helmets.

(b) Type 2—helmets intended for high temperature workplaces.

(c) Type 3—helmets intended for bushfire fighting.

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.

Stiffness Test When helmets are tested in accordance with Appendix B, the deformation of the shell under a force of 90 ±1 N shall not exceed 15 mm when measured between 8 s and 10 s after application of this force.

Shock Absorption Test When helmets are tested in accordance with Appendix C, the impact of 50 ±1 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.

Face Protection

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

A. 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 Average and Limited Value of Exposure

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.

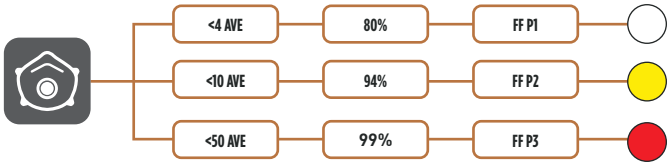
Aerosols and Aqueous Fogs - Small droplets produced during pulverization.- It corresponds to the concentration measured over one reference period (one day of 8H for example). If the AVE exceeds the concentration to which an individual can be exposed without running any risk for his health, a protection is necessary. The AVE is indicated on the card of toxicity of the handled products.

Limit Value Exposure (LVE) - 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



C. STANDARDS FOLLOWED

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.

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.

PERFORMANCE REQUIREMENTS FOR MEDICAL FACE MASKS

Test	Type I	Type II	Type III
Bacterial filtration efficiency (BFE): The ability of the face mask to filter our bacteria so that they are not released into the user's surroundings (BFE), (%).	≥ 95	≥ 98	≥ 98
Differential pressure: The lower this value, the easier it is for the user to breath normally (Pa/cm2).	<29.4	<29.4	<49
Splash resistance pressure: The ability of the face mask to withstand the penetration of liquid splashes (kPa).	NA	NA	<16.0
Microbial cleanliness: Microbial cleanliness documents cleanli- ness in the manufacturing process (cfu/g).	≤ 30	≤ 30	≤ 30

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:

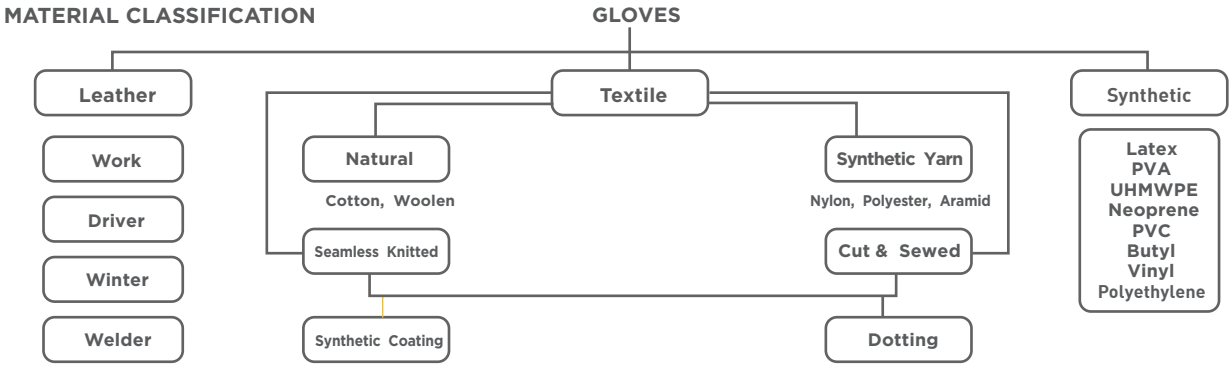
a. Cut b. Puncture c. Crush
d. Pinch e. Rotating Equipment f. Vibrating Equipment
g. Extreme Temperatures h. Electrocution
i. Irritation

A. 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.

- The type of hazard (physical, mechanical, chemical, biological).
- The nature of the task (regular process or incidental/ accidental).
- User comfort (fit, dexterity) and
- The workplace conditions (surface/ambient temperatures, wet/dry).



B. KNITTED GLOVES

The needle is the main instrument on a knitting machine. The gauge represents the number of needles in 1 English inch (2.54 inches). The higher the gauge, finer the glove, which results in better dexterity and sensibility. Gloves are available in 7,10,13, 15, & 17 gauges.

Kevlar® is a para-aramid fibre from DuPont which combines both lightness and extremely high tenacity.

For a given weight, Kevlar is five times more resistant than steel. Twaron® is the para-aramid fibre from AKZO Nobel Kevlar®/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:

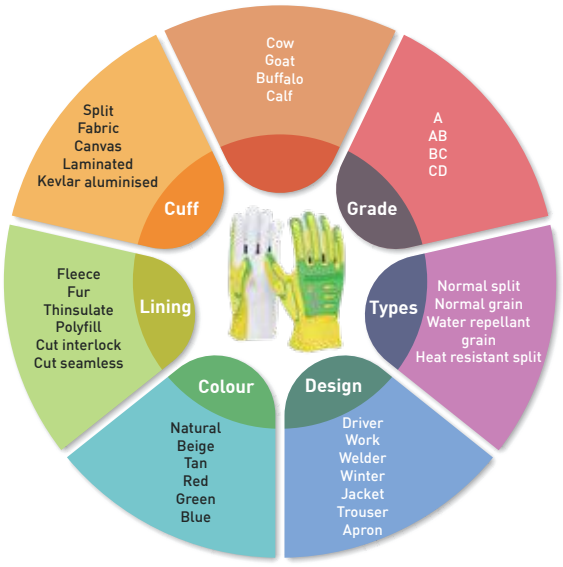
- Burns between 425°C and 475°C without melting
- Self-extinguishing (cannot burn without outside addition of fuel)
- Good chemical stability
- Soft to touch, comfortable, washable, good dexterity

C. 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 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.

D. 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.

E. 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 420 - 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.

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)

ANSI/ISEA 105-2016

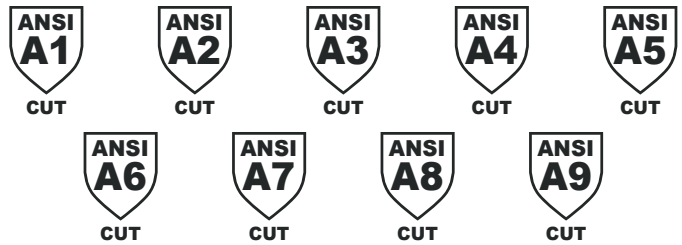
ABRASION RESISTANCE The American standard ANSI/ISEA 105-2016 abrasion testing method measures the number of cycles required for an abrasion wheel to break down the glove material. Levels 0 to 3 are measured with a 500 gram load on the abrasion wheel while levels 4 to 6 are measured with a 1,000 gram load. The glove material is then mounted and abraded by the spinning wheel until the material is worn through, creating a hole, under the corresponding weight. The greater the number of cycles it takes to break the material down, the higher the abrasion rating. The average of a minimum of 4 speciments shall be used to report the classification level. The results are shown in the ANSI abrasion standard rating chart below: ABRASION LEVEL RATING 0 1 2 3 4 5 6 Gram load 500 500 500 1000 1000 1000 Abrasion cycles to fail.

Abrasion Level rating	0	1	2	3	4	5	6
Gram load	500	500	500	500	1000	1000	1000
Abrasion cycles to fail	<100	<100	<100	<1000	<3000	<10000	<20000

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.



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

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

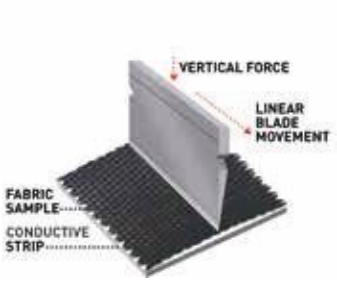
using a straight blade. The protection factor is then indicated on a scale from A to F.

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	Performace				
	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	-

Levels of performance for materials tested with EN ISO 13997						
Test	Level A	Level B	Level C	Level D	Level E	Level F
Straight Blade Cut Resistance (N)	2	5	10	15	22	30

Impact Resistant Test with Standard 13594:2015		
P	Passed	⩽7.0kN
2	Failed	⩾9.0kN
X	Not Tested	NA

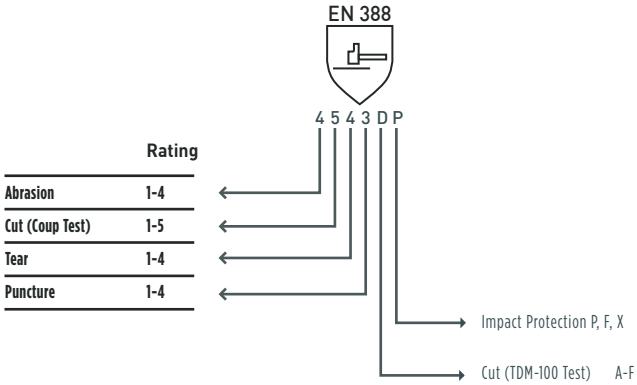
Volume Density

This indicates Volume Resistivity, where a glove can reduce the risk of electrostatic discharge. (Pass or fail test). These pictograms only appear when the gloves have passed the relevant test

EN 407

This standard specifies the test methods and the general requirements, the classification and the marking of gloves for protection against heat and/or fire (flames, contact heat, convective heat, radiant heat, small metal splashes or large projections of molten metal).

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



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 80mm 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
I	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.

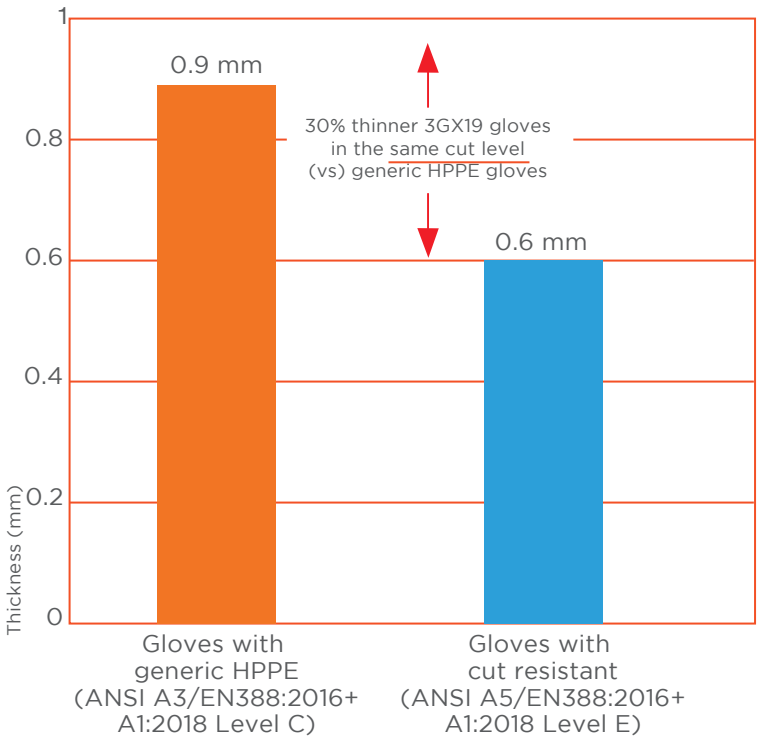
EN ISO 374-5:2015 - Terminology and performance requirements for micro-organisms risks

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)

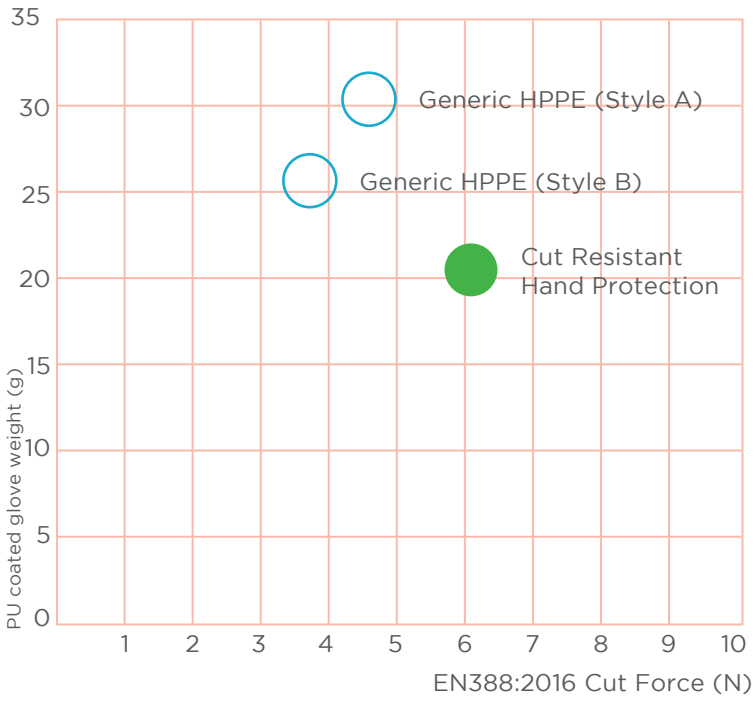
EN 511 - This standard applies to any glove to protect the hands against convective and contact cold until the temperature goes down to – 50°C. The 'cold hazard' pictogram is accompanied by a 3 - digit number:

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 11611: 2015 – Protective Clothing for use in Welding and Allied Processes

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.

ISO 11611:2015 specifies two classes with specific performance requirements, i.e., Class 1 being the lower level and Class 2 the higher level.

Class 1

Class 1 defines the protection against less hazardous welding techniques and situations, causing lower levels of spatter and radiant heat.

Class 2

Class 2 defines the protection against more hazardous welding techniques and situations, causing higher levels of spatter and radiant heat.

ISO 11611:2015 specifies two classes with specific performance requirements, i.e., Radiant Heat & Flame spread test.

Radiant Heat

Class 1 is protection against less hazardous welding techniques and situations, causing lower levels of spatter and radiant heat.

Class 2 is protection against more hazardous welding techniques and situations, causing higher levels of spatter and radiant heat.

Flame Spread

Code letter A1 - 10s surface ignition (required)
Code letter A2 - 10s edge ignition (optional)

(EN 1149) Electrical resistance

Should be higher than 105 ff

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 ≤ 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 2112:2018 - 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 occu
- 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

Water Repellency Test

The waterproofing (X) is measured using a hydrostatic pressure test. This involves applying a quantity of pressurised water to the garment, and the water penetration rating indicates the pressure it can withstand.

Below is a breakdown of how the water penetration is classified; 8000 Pa (pascals) is equal to 1.16 psi (pounds per square inch). Water penetration is tested both before and after pre-treatments, which include abrasion, flexing and washing.

Wp= Water Penetration Resistance
Pa= Pascal Pressure Units

EN343

	Class 1	Class 2	Class 3
Sample type	1	2	3
Fabric before pretreatment	Wp 8000 Pa	No test needed*	No test needed*
Fabric after pretreatment	N/A	Wp 8000 Pa	Wp 13000 Pa
Seams before pretreatment	Wp 8000 Pa	Wp 8000 Pa	Wp 13000 Pa

*Test not required because the worst situation for classes 2 and 3 is after pre-treatment.

Breathability test

The breathability (Y) is tested in accordance with ISO 11092. A skin model is used to replicate human skin and measures water vapour resistance, which is initially expressed as an RET number (Resistance of Evaporation of a Textile). The lower the RET rating, the greater the breathability, and therefore the higher the item will score in the overall EN 343 rating.

Once the garment breathability has been classed as 1, 2 or 3, you can refer to the recommended wearing times below when working in various temperatures. These times can be prolonged where there are breaks in the work, or the garment has effective openings for ventilation.

Table showing recommended maximum continuous wearing time in minutes for a complete suit, consisting of jacket and trousers without thermal lining.

	Class 1	Class 2	Class 3
Amblent working temperature	RET>40	20<RET 40	RET>20
25°C	60 mins	105 mins	205 mins
20°C	75 mins	250 mins	No limit
15°C	100 mins	No limit	No limit
10°C	240 mins	No limit	No limit
5°C	No limit	No limit	No limit

EN 342: 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/cm² (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

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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 and coefficient	Yes, Cl: 5.5.1	Yes	
	Abrasion Resistance		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
S7I (Nonmetal Insert Type PI) 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	HI	
A. HEAT INSULATION OF OUTSOLE COMPLEX	CI	CI	
B. COLD INSULATION OF OUTSOLE COMPLEX	E	E	
ENERGY ABSORPTION OF SEAT REGION	WR	WR	
WATER RESISTANCE	M	M	
METATARSAL PROTECTION	AN	AN	
ANKLE PROTECTION	CR	CR	
CUT RESISTANCE	XXX	SC	
SCUFF CUP ABRASION	WRU	WPA	New Entry At 2022 Version
WATER PENETRATION AND ABSORPTION	HRO	HRO	New Entry At 2022 Version
RESISTANCE TO HOT CONTACT	FO	FO	
RESISTANCE TO FUEL OIL	XXX	LG	
LADDER GRIP	SRA		New Entry At 2021 Version
SLIP RESISTANCE		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

5. **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.

6. **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 S1-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.

7. **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 - Material 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 - Outsole having a density of 0.9 g/ml or less with a cell structure visible under 10x 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 which protects the wearer against electrical shocks by preventing the passage of dangerous current through the body via the feet

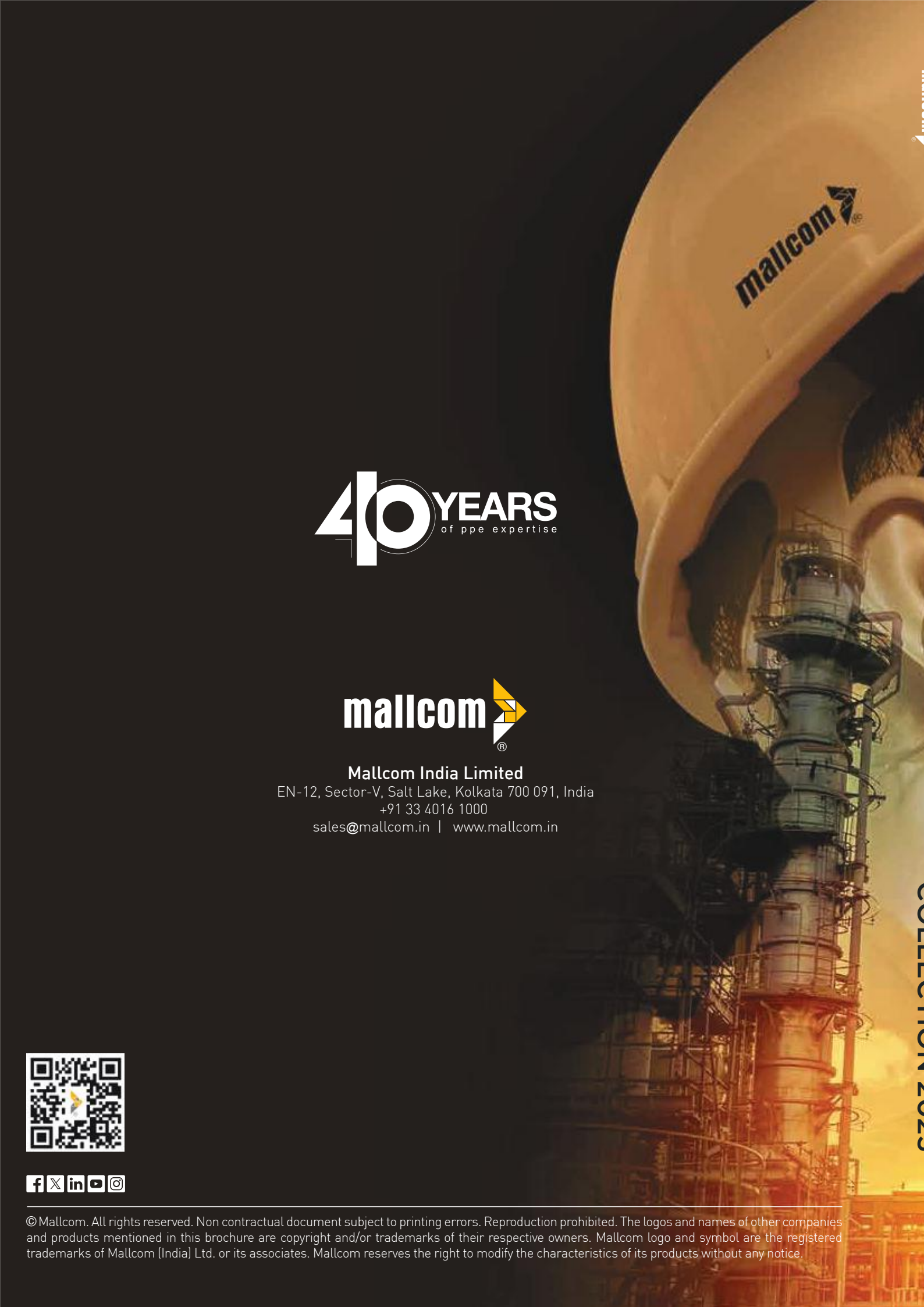
Fuel Oil - Aliphatic hydrocarbon constituent of petroleum

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.

CROSS-SECTION OF A SAFETY SHOE

GLOSSARY OF ICONS:

Abrasion	Air Con.	Anti-scratch	Anti-fog	Bump	Breathable	Chemical	Cut Resistance	Cuff
Dry environment	Chemical resistant	EN 388 Cut Level 5	Culf	Dust	Dirty	Indoor	Dexerity	Knitted wrist
Light & Comfortable	Visible in dark	Micro Organisam	Flame	Grip	Heat	Water Resistance	Impact	Puncture
Rough	Rainforced	Rainfall	Oil Resistance	Oily environment	Projectiles	UV	Welding	Water repellent
Weight	Cut Level D	Cut Level 5	Spark	Tear	Temparature	Oil Resistance	Ventilated back	Occupational
Cold Insulation	Washable	Anti Allergic	Cut Level E	Cut Level F	Cut Level C	Hi-visibility	Slip Resistant	ANSI cut A6
180° WT	Contact Heat Resistance	Thermal gloves	Protection from Molten Metal	Washable	Anti Allergic	Occupational	ANSI cut A5	Contact Heat Resistance



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of ppe expertise

mallcom®

Mallcom India Limited
EN-12, Sector-V, Salt Lake, Kolkata 700 091, India
+91 33 4016 1000
sales@mallcom.in | www.mallcom.in