Base
feel the comfort

GUIDE TO OUR PATENTS AND TECHNOLOGIES

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01

LIGHTNESS AND FLEXIBILITY WITH ANTIFATIGUE EFFECT

AirTech | **tpu-SKIN®** | **Fresh'n Flex**

TECHNOLOGIES

01

LIGHTNESS AND FLEXIBILITY WITH ANTIFATIGUE EFFECT

TECHNOLOGIES

AirTech | tpu-SKIN® | Fresh'n Flex

COLLECTIONS WITH AIRTECH + FRESH'N FLEX

> *ALL*

COLLECTIONS WITH AIRTECH + TPU-SKIN + FRESH'N FLEX

> *PLANET, RECORD, MISS BASE, I4, CLASSIC PLUS, CLASSIC, HYGIENE, RUN@WORK*

The exclusive technology **AirTech + TPU Skin** patented by Base Protection, **reduces the outsole's hard thickness to just 0.2 mm**.
This increases the soft and elastic thickness of the midsole, which cushions and distributes the body's weight.

In this way, the shoe is more comfortable, **lightweight, flexible** and has an **antifatigue effect**.

THE RESULT? LESS FATIGUE AND MORE ENERGY, EVEN AFTER MANY HOURS OF WORK.

	TRADITIONAL DUAL DENSITY FOOTWEAR		*BASE PROTECTION INNOVATIVE FOOT PROTECTION*
	DUAL DENSITY (PU/PU) OR (PU/TPU)	*DUAL DENSITY (PU/PU) OR (PU/TPU)*	*AIRTECH + TPU SKIN (i4 – B1212A)*
	Steel toe-cap Steel plate	Composite toe-cap Textile plate	Composite toe-cap Fresh'n Flex plate
Total weight of the footwear	670 g	590 g	530 g
Required energy to take a 1 meter step	6,7 Joule	5,9 Joule	5,3 Joule
Required energy to flex the footwear by 30° and lift the heel by 10 cm (1)	3 Joule	1,5 Joule	0,5 Joule
Daily steps	4.800	4.800	4.800
Total daily energy consumption (2)	46.560 Joule	35.520 Joule	27.840 Joule
Saved energy	0%	-24%	-38%

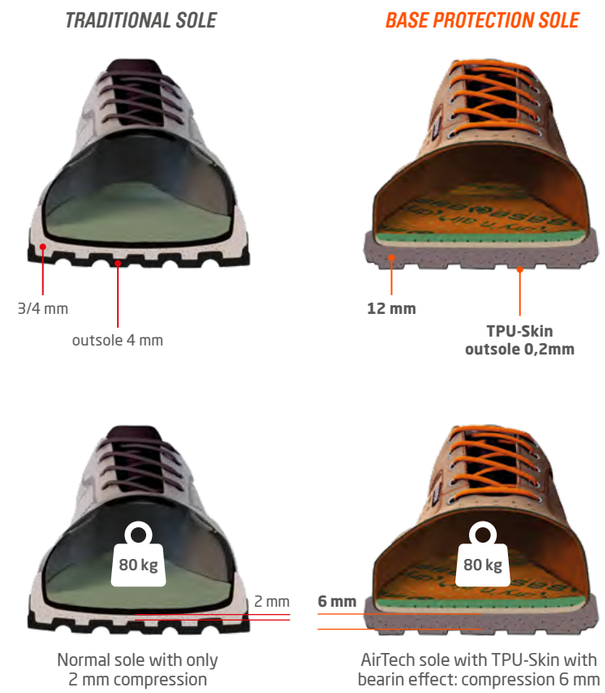
(1) Flexing dual-density footwear with a steel plate by 30° and lifting the heel by 10 cm requires a force of 30 N, which means an energy of 3 Joules. For dual-density footwear with a textile layer, only half the force is needed–15 N, or 1.5 Joules. Base Protection footwear, featuring AirTech + TPU Skin technology and a Fresh'n Flex midsole, requires just 5 N, which is 0.5 Joules, to flex the shoe by 30° and lift the heel by 10 cm.

(2) This information is the sum of the energy required to take a step and flex the shoe. It represents the total energy a worker must use just to wear safety footwear.

*WITH BASE PROTECTION FOOTWEAR FEATURING AIRTECH + TPU-SKIN AND FRESH'N FLEX TEXTILE LAYER, A WORKER CAN **SAVE MORE THAN 18,000 JOULES OF ENERGY DAILY.***

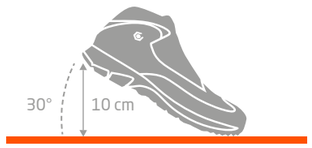
WITH THE SAME AMOUNT OF ENERGY, A WAREHOUSE WORKER COULD MOVE OVER 180 BOXES, EACH WEIGHING 10 KG, BY ONE METER.

Moreover, reducing the hard and compact thickness of the outsole while increasing the soft and lightweight thickness of the midsole allows for **greater flexibility and less pressure on the metatarsus**, giving the worker the feeling of walking on a soft pillow. The midsole's compression potential is 50%.



HOW MUCH ENERGY DO WE CONSUME AT WORK?

On average, a worker takes around 5 steps every minute, which adds up to **2,400 steps in 8 hours**, resulting in 4,800 movements (both feet). The footwear must flex by about 30° to support the steps of the foot during a one-meter step.



The energy a worker needs to lift their heel at least 10 cm off the ground is directly proportional to the stiffness of the sole.

The combination of AirTech, TPU-Skin, and Fresh'n Flex **technologies gives** Base Protection footwear **an anti-fatigue effect**, thanks to its exceptional lightness and flexibility. This makes it ideal for jobs that involve long periods of standing or repetitive movements throughout the day.

02

EXTRA GRIP FOR HIGH SLIP RESISTANCE

AirTech *SINGLE DENSITY* | **Sticking®**

TECHNOLOGIES

02

EXTRA GRIP FOR HIGH SLIP RESISTANCE

TECHNOLOGY

AirTech *SINGLE DENSITY*

COLLECTIONS WITH AIRTECH SINGLE DENSITY
> *SMART EVO, HYGIENE*

The grip of work shoes is essential for **workplace safety**. The **Smart EVO collection** features a sole that combines an innovative outsole design with a special polyurethane compound, **providing extremely high slip resistance values**. The grip of the sole is over 100% higher than current standards, as shown in the following table.

	SLIP RESISTANCE EN ISO 20345:2011				***SLIP RESISTANCE EN ISO 20345:2022***			
	SRA		***SRB***				***SR***	
	Ceramic Tile Floor + cleaner		Steel Floor + glycerine		Ceramic Tile Floor + cleaner		Ceramic Tile Floor + glycerine	
	Forward HEEL slip **≥ 0,28**	Forward FLAT slip **≥ 0,32**	Forward HEEL slip **≥ 0,13**	Forward FLAT slip **≥ 0,18**	Forward HEEL slip **≥ 0,31**	Forward FLAT slip **≥ 0,36**	Forward HEEL slip **≥ 0,19**	Forward FLAT slip **≥ 0,22**
RESULT	0,72	0,69	0,29	0,34	0,76	0,68	0,36	0,39
PERFORMANCE INCREASE RELATED TO REGULATORY REQUIREMENTS	157%	116%	123%	89%	145%	89%	90%	77%

The performance increase in relation to the regulatory requirement ensures that **this sole reduces the risk of injury from slipping**. This feature makes **Base Protection footwear one of the best anti-slip safety options**, without compromising softness, durability, or lightness, providing a high **level of comfort** for the worker.

TECHNOLOGY

Sticking®

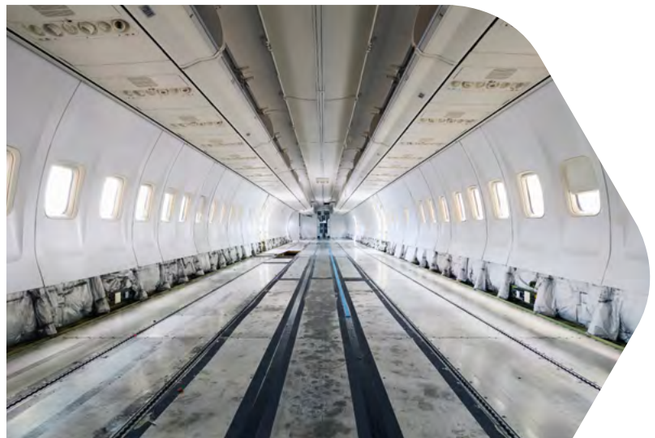
COLLECTION WITH STICKING
> *HYGIENE*

AVAILABLE ON PRODUCTS
> *B0508*
> *B0501, B0502* ***(ON REQUEST)***

BASE PROTECTION FOOTWEAR WITH STICKING TECHNOLOGY ***IS AVAILABLE IN BOTH PU SINGLE-DENSITY AND DUAL-DENSITY WITH RUBBER.***

Single-density footwear
suitable for:

- indoor work on smooth and delicate floors, as they do not leave marks or scratches
- food industry, as the low cleats do not accumulate dirt, ensuring greater hygiene
- areas with liquids because they provide maximum grip and slip resistance
- the aerospace industry, where the FOD policy is effective



Dual-density footwear with rubber is recommended for **floors where** special substances, such as **sugar, fats, and oils**, are present.

03

BREATHABILITY AND DRY FEET

Dry'n Air® | Dry'n Air® PLUS | Dry'n Air® GEL

TECHNOLOGIES

03

BREATHABILITY AND DRY FEET

TECHNOLOGIES

Dry'n Air® | Dry'n Air® PLUS | Dry'n Air® GEL

COLLECTIONS WITH DRY'N AIR
> *FORTREX, KAPTIV, SPECIAL, OXFORD, RECORD, i4, RUN@WORK*

COLLECTIONS WITH DRY'N AIR PLUS
> *PLATINUM*

COLLECTIONS WITH DRY'N AIR GEL
> *PLANET, MISS BASE*

The **physiological temperature** of the foot **varies between 28°C and 32°C** and can increase or decrease depending on environmental conditions or the type of activity we are performing.

WHAT HAPPENS IF THE FOOTWEAR IS NOT BREATHABLE ENOUGH?

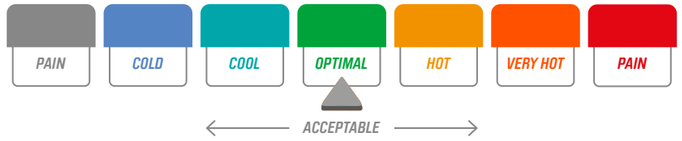
The foot's **sweat**, in the form of vapour, is not expelled outside and **remains trapped inside the footwear**. In a short time, the foot becomes completely wet, **causing several problems**: bad odour, a risk of fungal infections, and premature deterioration of the footwear.

HOW MANY GRAMS OF SWEAT DOES A FOOT PRODUCE IN 8 HOURS?

Normally, during work activities, the temperature of the foot increases. The body's natural response is to sweat, which helps regulate temperature. When sweat evaporates, it uses energy, which lowers the body's temperature and restores the thermal balance of the foot.

This is taking into account an **external temperature of approximately 23°C** and a relative **humidity of around 50%**.

THE OPTIMAL TEMPERATURE OF THE SKIN IS BETWEEN 28°C AND 32°C



One of the most important features of professional work footwear is **water vapour permeability** (also called **breathability**). This feature allows for airflow and helps keep the temperature regulated.

Fresh air enters through the collar and moves through the insole.

While walking, the pressure from the heel pushes air forward and captures humidity.

Hot and humid air is pushed up, removing heat.

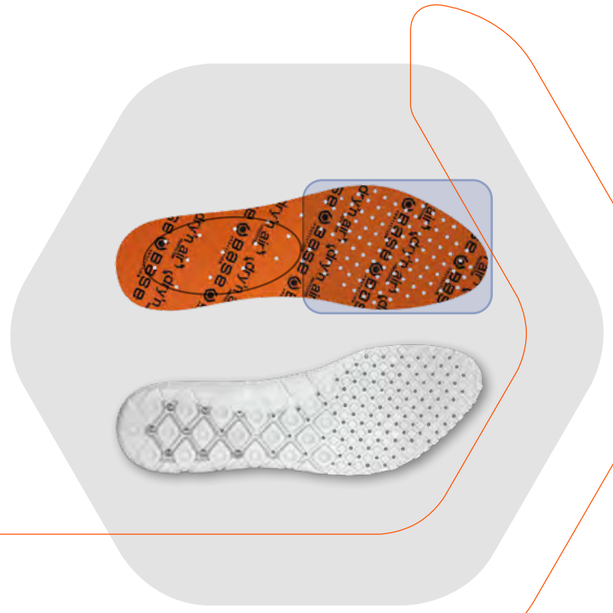
Base Protection creates breathable footwear thanks to **Dry'n Air** technology, a patented system of holes and ducts that allows for better airflow between the foot and the sole. The duct system connects all channels, making the **airflow more effective**.

Insole featuring an air canal system and perforation-resistant fabric

In the **Dry'n Air Plus** (Platinum Line), the air canal system is integrated into the sole along with a perforation-resistant fabric. Its operation is based on the 'Venturi effect,' which allows air to circulate beneath the foot.

In the **Dry'n Air Gel** version, a highly-absorbing gel is integrated into the heel area to absorb and dissipate large amounts of energy generated during walking, thus reducing joint fatigue.

Base Protection's breathable work footwear, featuring **Dry'n Air**, **Dry'n Air Plus** and **Dry'n Air Gel** technologies, brings clean, fresh air beneath the foot, absorbs residual moisture from the footwear, and expels it. This improves the microclimate inside the footwear and enhances foot health, ensuring the foot remains dry and fresh even in high temperatures or high workload situations that increase sweat.



The numerous **holes** in the Dry'n Air insoles, mainly concentrated in the sole area, create an **additional breathable surface** of at least **100 cm²** beneath the foot, allowing more **sweat to escape from the footwear**. Under sedentary working conditions, Base Protection footwear with **Dry'n Air** technology has a significantly higher sweat-dispersing capacity compared to conventional footwear.

Airflow through the ducts **increases while walking**. With each step, the foot exerts **pressure** on the heel, creating a **"super pumping" effect** that pushes more air forward through the ducts. Forced airflow, which increases with the number of steps, enhances heat and vapour dispersion due to efficient thermal exchange with the external environment. Therefore, in more demanding working conditions with higher sweat production, **the benefits of Dry'n Air technology become much more evident**.

ACTIVITY	AMOUNT OF PRODUCED SWEAT (g)	NUMBER OF STEPS/MINUTE (hypothesis)	SWEAT DISPERSION (breathability)			
			MASS (g)		% dispersed sweat vs produced sweat (1)	
			TRADITIONAL LEATHER FOOTWEAR	BASE PROTECTION FOOTWEAR WITH DRY'N AIR	TRADITIONAL LEATHER FOOTWEAR	BASE PROTECTION FOOTWEAR WITH DRY'N AIR
Sedentary work	20	<5	6	~20	30%	100%
Light work	40	10-20	10	~40	25%	100%
Heavy work	200	>60	30	~200	15%	100%
			Pumping	Super pumping effect	Pumping	Super pumping effect

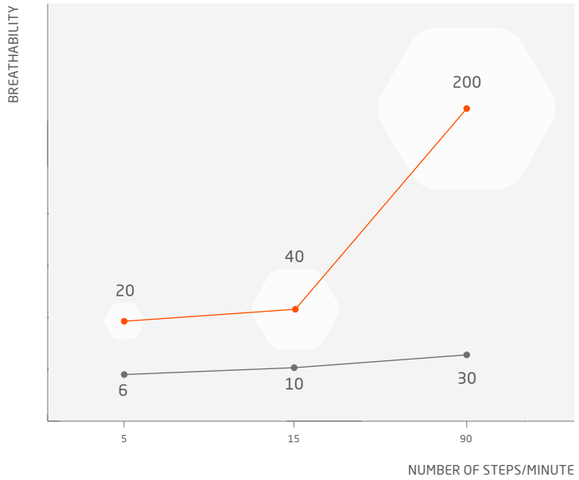
(1) Under the following working conditions:
› *external temperature* 23°C
› *ambient relative humidity* 50%

SWEAT DISPERSION [g]= UPPER BREATHABILITY × WORKING HOURS × BREATHABLE SURFACE

SAFETY CLASSES		UPPER MATERIAL	UPPER BREATHABILITY (mg/cm²*h)	WORKING HOURS (h)	BREATHABLE SURFACE (cm²)	SWEAT DISPERSION (breathability)	
						(g)	% dispersed sweat vs produced sweat (1)
S2 - S3	Traditional footwear	Leather	2,5	8	300	6	30%
	Base Protection footwear with Dry'n Air	Nubuck	6	8	400	19,2	96%
S1	Traditional footwear	Textile Suede leather	3,5	8	300	8,5	42%
	Base Protection footwear with Dry'n Air	High Tech Textile	12	8	400	38,4	192%

(1) Under the following working conditions:
› *external temperature* 23°C
› *ambient relative humidity* 50%

› *sedentary work* (<5 steps/minute)
› *sweat produced:* around 20 g per foot



NUMBER OF STEPS/MINUTE	5	15	90
Traditional footwear breathability	6	10	30
Breathability of Base Protection footwear with Dry'n Air technology	**20**	**40**	**200**

04

ERGONOMIC PROTECTION AND COMFORT FOR TOES

SlimCap | SpaceCap

TECHNOLOGIES

04

ERGONOMIC PROTECTION AND COMFORT FOR TOES

TECHNOLOGIES

SlimCap | SpaceCap

COLLECTIONS WITH SLIMCAP

> *RECORD, CLASSIC PLUS, SMART EVO, i4, FORTREX, PLATINUM, SPECIAL, WEARECO, HYGIENE, RUN@WORK*

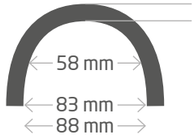
COLLECTION WITH SPACECAP

> *OXFORD*

Safety footwear has been seen as heavy and unattractive for years. However, the trend has changed: **safety footwear is now lightweight and stylish**.

To improve aesthetics and comfort, Base Protection designed **SlimCap and SpaceCap toe-cap protections** which are known for their **stylish design, low volume, light weight, and high performance**.

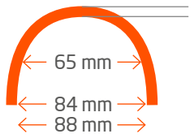
TRADITIONAL PLASTIC TOE-CAP



Thickness from 2,5 mm at the sides to 10 mm at the tip.

Greater thickness reduces the inner space causing the toe-cap to press against the toes.

SLIM CAP



Thickness from 2 mm at the sides to 6,5 mm at the tip.

More space for the toes, which do not touch the edges of the toe-cap.

TOE-CAPS MEET THE RIGOROUS MECHANICAL STRESS REQUIREMENTS OF EN ISO 20345 AND EN 22568.

SPACECAP TOE-CAP

SpaceCap is the new non-metallic toe-cap that offers **maximum protection** and **elegance**. It was designed for the **Oxford collection**, specifically for professionals (managers, architects, engineers, surveyors, inspectors, etc.) who visit construction or production sites.

SLIMCAP TOE-CAP

SlimCap toe-cap is:

1. lighter and more flexible
2. less bulky. The tip thickness, at 6.5 mm, is among the lowest compared to non-metallic tips, providing more space for toes
3. non-magnetic
4. thermally insulated

The protective strip is well-shaped and securely attached to the toe-cap, eliminating the risk of accidental detachment that could cause pressure and pain in the toes.

The shape was inspired by the famous "Roman arch" and was adjusted for the footwear to ensure a better **fit with the upper**.
The **SpaceCap toe-cap** effectively **dissipates energy** from accidental impacts.

05

COMFORT, FOOT HEALTH AND NO BAD ODOURS

SmellStop | SmellStop Deluxe

TECHNOLOGIES

COMFORT, FOOT HEALTH AND NO BAD ODOURS

TECHNOLOGIES

SmellStop | SmellStop Deluxe

COLLECTIONS WITH SMELLSTOP > *ALL*
COLLECTION WITH SMELLSTOP DELUXE > *OXFORD*

Sweating is a normal response of the body. There are days when the feet sweat more due to factors such as heavy or non-breathable footwear, hot weather, or certain emotional states. In these cases, sweat can cause embarrassment when removing footwear indoors with other people and may lead to pain and abrasions, as the foot slips inside the footwear.

THE SOLUTION IS THE SMELLSTOP LINING DESIGNED BY BASE PROTECTION.

The lining is treated with **antibacterial and antimicrobial substances** that **prevent the growth of microorganisms** responsible for fungal infections and bad odours, reducing the risks of infections caused by sweat. The advantage of SmellStop technology is that this antibacterial treatment **remains effective throughout the entire lifecycle of the safety footwear**.

SMELLSTOP DELUXE LINING

The **SmellStop Deluxe lining** for the Oxford collection is **made from** a new **eco-friendly microfiber** that **offers high breathability, excellent sweat absorption, and maximum resistance to abrasion** (both dry and humid conditions). Additionally, **silver ions enhance comfort**, by giving the lining antibacterial, antistatic, and antimicrobial properties, ensuring a consistent and stable internal microclimate.

SMELL STOP
The treatment uses a biocide called Zinc pyrithione (CAS No. 13463-41-7), along with a sodium docusate mixture (CAS No. 577-11-7) and ethanol (CAS No. 200-578-6). These ingredients help prevent the buildup of microorganisms on the material's surface.

SMELL STOP DELUXE
The antibacterial treatment uses silver ions (CAS No. 7440-22-4), sodium carbonate (CAS No. 497-19-8), and zinc oxide (CAS No. 1314-13-2).

06

CUSTOMISED COMFORT

SCAN&FIT

TECHNOLOGY

06

CUSTOMISED COMFORT

TECHNOLOGY

SCAN&FIT

COLLECTIONS WITH SCAN&FIT

> *ALL FOOTWEAR EXCEPT FOR MISS BASE COLLECTION*

The **Scan&Fit** project is inspired by Base Protection's mission: **"Feel the comfort"**.

Goals:

> to meet the needs of workers who require custom insoles due to specific anatomical foot structures

> to provide workers with a suitable insole that prevents the onset of conditions (which could later require the use of orthopedic insole)

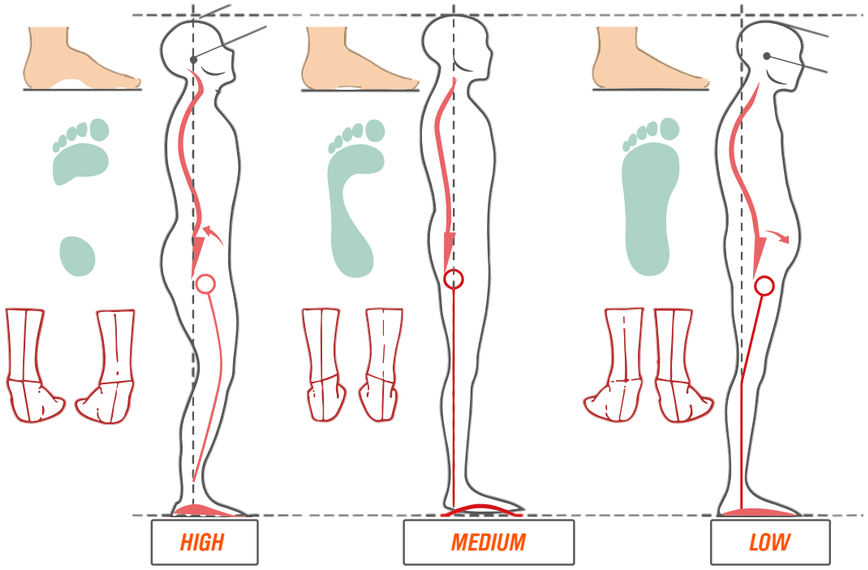
> To provide an insole that can be used with all Base Protection safety footwear while maintaining CE product certification

> to develop a system that automatically assigns the most suitable insole based on a 3D foot scan

The project has been developed with two international partners:

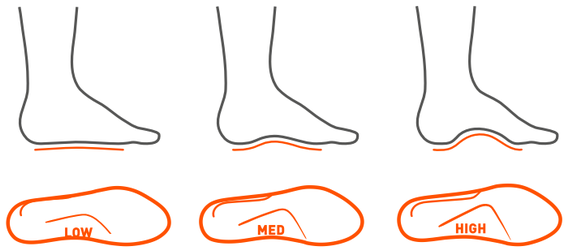
> Rizzoli Orthopaedic Institute (Bologna)

> Institute of Biomechanics of Valencia (IBV)



The Rizzoli Orthopaedic Institute conducted an extensive measurement procedure on a sample of 44 healthy working-age individuals to identify the geometric characteristics of three reference foot arch types: high, medium, and low. Additionally, the Institute provided valuable information on insole design specifications, including geometry and material composition.

The Institute of Biomechanics of Valencia conducted a statistical anthropometric analysis to evaluate the compatibility between the insole shape and the anatomical characteristics in its database, which contains over 13,000 foot scans of European individuals.



Each insole line features **three geometric types** to better accommodate the shape of the foot:

> **High Foot Arch**

> **Medium Foot Arch**

> **Low Foot Arch**

The three distinct geometric types increase the chances of matching the insole correctly to the foot.

The result of this **research project** led to the **development of two lines of insoles** (PATENT N. 102020000005392).

Scan&Fit Omnia is compatible with all Base Protection footwear (except for Record and Miss Base collections).

Scan&Fit Record is compatible with all footwear in the Base Protection Record collection.

DESPITE THIS, WE KNOW THAT THE ARCH OF THE RIGHT FOOT CAN BE DIFFERENT FROM THAT OF THE LEFT FOOT.

WHAT SHOULD WE DO THEN?

Variable geometry comfort

To improve comfort and enhance customisation, **the foot arch area has been designed with "variable geometry"**. This allows the **insole to adapt almost 100% to the user's foot** (for non-pathological feet). **The insoles are made of a double-density material** providing **support, stabilisation, cushioning, comfort, and relief** in case of inflammation and heel pain.

They are all **covered with abrasion-resistant fabric and treated with HeiQ Fresh antibacterial treatment**.

Moreover, the **presence of silver fibres** offers the following **properties** to the insole:

> antimicrobial and anti-odour
> heat dissipation and constant temperature maintenance
> antistatic (suitable for use in ESD footwear)
> resistant to washing and abrasion

CLASS 1 MEDICAL DEVICE

We would like to remind you that these are not orthopaedic insoles, but insoles designed to prevent the development of potential conditions that typically arise from using inadequate footwear and/or insoles.

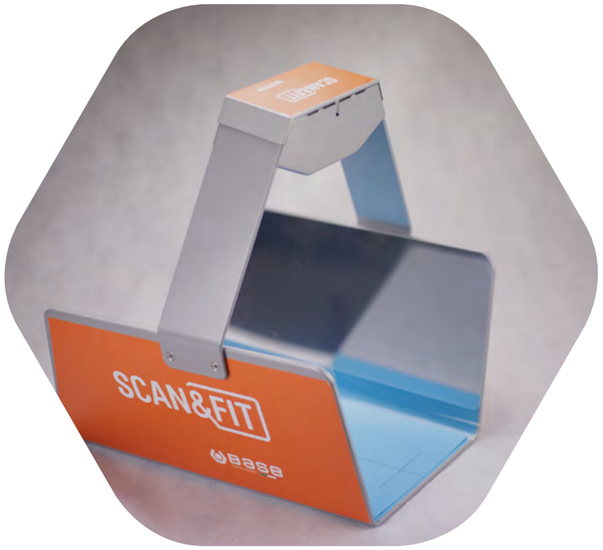
Scan&Fit insoles are certified as Class 1 medical devices (preventive medical devices) and can be used with all Base Protection footwear, maintaining their CE/UE product certification.

This is possible because all Base Protection footwear is certified to work with the insoles made by Base Protection, including the three types of Scan&Fit insoles (high, medium, and low).

HOW TO PERFORM THE SCAN?

THROUGH THE SCANNER

To provide technical support directly at your company, we have **created the Scan&Fit Center network**. With their expertise and a **portable scanner**, you can reliably and efficiently scan your workers' feet.



07

WATERPROOF COMFORT

LifePlus | H$_2$stOp® | H$_2$stOp.xt®

TECHNOLOGIES

07

WATERPROOF COMFORT

TECHNOLOGIES

LifePlus | H_2stOp® | H_2stOp.xt®

COLLECTION WITH LIFEPLUS
> *HYGIENE*

COLLECTIONS WITH H_2STOP
> *SPECIAL, FORTREX*

PRODUCT WITH H_2STOP.XT
> *NAUTILUS*

LifePlus technology reduces the wear of soles in work environments where water-based liquids are present, such as in the agrifood, chemical, and pharmaceutical industries.

H_2stOp technology provides complete waterproofing in environments with constant water exposure, while still offering the typical comfort of Base Protection footwear.

H_2stOp.xt is a new patented technology that makes footwear completely waterproof. With zero seams, no membrane, and a water- and dirt-repellent upper: **H_2stOp.xt ensures the highest standards of hygiene, comfort, liquid penetration resistance, and lightness.**

LIFEPLUS TECHNOLOGY

- greater **resistance to hydrolysis in the presence of aqueous solutions**
- greater **resistance to damage from chemical products**
- greater **slip resistance**
- greater **resistance to low temperatures**

THE SOLE COMBINES

- excellent **slip resistance performance**
- excellent **resistance to hydrolysis**

Water-resistant footwear is usually made with a lining combined with a waterproof membrane. This creates a waterproof sock that is inserted into the upper part of the shoe. However, there is a space between the upper and the membrane. When the footwear comes into contact with water, it can enter the upper through the stitching holes and get trapped between the upper and the lining, as it is blocked by the waterproof lining.

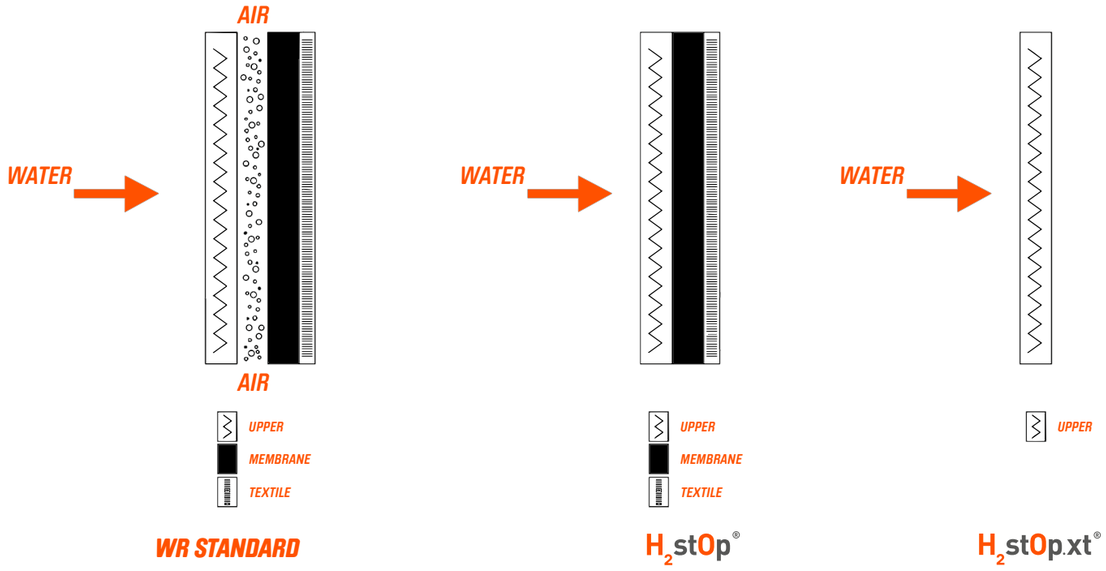
The presence of water in this space:
- increases the weight of the footwear
- creates an uncomfortable and humid microclimate, which could freeze in low external temperatures
- facilitates the formation of mold and the deterioration of materials

H_2STOP TECHNOLOGY

H_2stOp technology **eliminates the space between the upper and the membrane**. The membrane is heat-sealed to the upper, sealing all the seams where water could enter.

H_2STOP, H_2STOP.XT: INNOVATION DOES NOT STOP

H_2stOp.xt patented technology is a further step forward: **the footwear is totally waterproof without the need for a membrane**. Traditionally, heat-sealing the membrane to the upper seals the seam holes, but this new technology eliminates seams entirely, removing the small holes created by needles. **The absence of seams and the use of water-repellent materials make the footwear completely water-resistant.**



The absence of seams and overlapping parts prevents the accumulation of residues, ensuring the hygiene of the footwear. This is an important requirement, especially in **HACCP-controlled** working environments (such as the agri-food industry) **and in the pharmaceutical industry**.
Moreover, **the lack of overlapping parts reduces pressure on the foot, increasing comfort and lightness**.

08

DYNAMIC COMFORT AND FOOT HEALTH

idaptive®

TECHNOLOGY

08

DYNAMIC COMFORT AND FOOT HEALTH

TECHNOLOGY

idaptive®

COLLECTION WITH i-DAPTIVE

> *KAPTIV*

i-Daptive is Base Protection's patented technology designed to **enhance comfort and safety**. It is an intelligent **adaptive system that automatically adjusts the footwear's mode** based on how it is used.

FOOTWEAR MODES

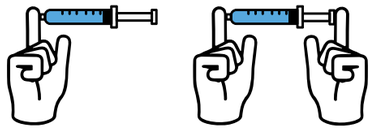
- **Comfort mode:** i-Daptive provides an anti-fatigue effect by returning some of the absorbed energy in alignment with the walking cycle, ensuring a biomechanically compatible experience.
- **Dynamic mode:** i-Daptive technology adapts dynamically and instantly to different usage conditions, thanks to its shape and variable geometry.
- **Off-Road mode:** i-Daptive technology ensures stability control in extreme conditions and on rugged terrain, continuously keeping the foot and joints aligned, reducing the risk of trauma and sprains.

I-DAPTIVE IS BASE PROTECTION'S PATENTED TECHNOLOGY. IT IS AN INTELLIGENT SYSTEM FOR DYNAMIC COMFORT.

i-Daptive technology is a **viscoelastic system with variable geometry**. **Its "adaptive behavior"** can be explained using the example of a syringe filled with air and water.

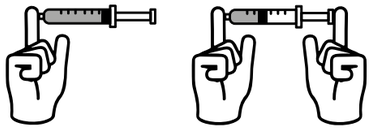
SYRINGE FILLED WITH WATER

If we close the exit hole and push, we encounter resistance almost immediately because water is an incompressible fluid.



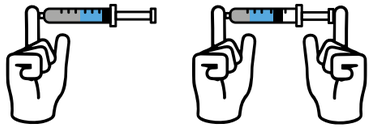
SYRINGE FILLED WITH AIR

If we close the exit hole and then push, the air initially does not resist because it is a compressible fluid. As the air is gradually compressed, it offers more resistance until it can no longer be compressed.



SYRINGE FILLED WITH AIR AND WATER

If we close the exit hole and push, initially only the air does not resist. As it is gradually compressed, the air provides more resistance until it is no longer possible to compress the air/water mix.



This is the principle behind **i-Daptive** technology, a variable geometry system that **easily compresses under small load energies** (such as those from simple walking). However **as the load energies increase** (for example, from a jump) **it becomes progressively less compressible** until the support and stabilisation action kicks in, **preventing potential injuries**.

MAIN ELEMENTS

Based on these concepts, the "system" can be divided into three main elements:

- **viscoelastic shock absorber** *(orange in the image)*
- **containment piece of mainly elastic material**
- **shock absorber conditioning piece** *(blue in the image)*

ABSORPTION

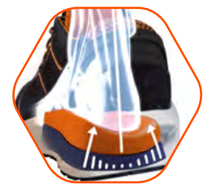
The system gradually absorbs the energy from the impact between the foot and the surface, minimising the shock sensation.

DISSIPATION

i-Daptive system effectively dissipates high-impact energy, providing joints relief and restoring the normal functions and ability. The more intense the impact, the more the shoe works to protect the wearer.

RETURNS ENERGY

The amount of energy returned varies with the speed and movement of the foot, providing optimal performance and support with every step.



STABILITY

The foot is continuously supported, as the sole maintains its position, even during supination and pronation movements. This helps ease pressure on joints.

09

ANTI-SLIP DESIGN

RXT®

TECHNOLOGY

ANTI-SLIP DESIGN

TECHNOLOGY

RXT®

COLLECTION WITH RXT

> CAPSULE KAPTIV

The strength of this technology resides in the outsole design, which **ensures grip, traction** and greater **stability even on continuously wet and slippery surfaces**.
The outsole design is the result of extensive research. During the design process of the cleats, technical solutions from tire manufacturers were analysed.

SUPERIOR SLIP RESISTANCE.

The result is a design with a network of microchannels and channels inside each cleat. This design helps expel water and liquids from beneath the sole during regular use of the footwear.

10

EXTREME RESISTANCE FOR EXTREME ENVIRONMENTS

4x4

TECHNOLOGY

EXTREME RESISTANCE FOR EXTREME ENVIRONMENTS

TECHNOLOGY

4x4

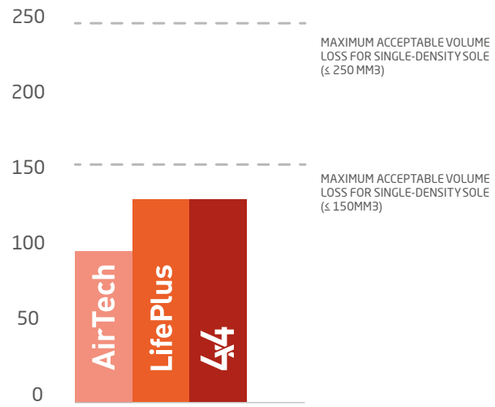
COLLECTION WITH 4X4

> *CAPSULE CLASSIC PLUS*

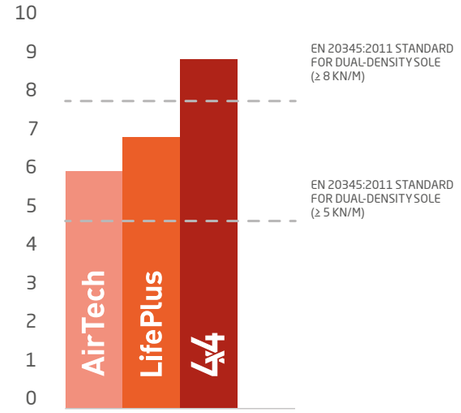
The sole, featuring 4x4 Technology, offers superior wear resistance without compromising comfort and lightness.
4x4 is **ideal for extreme working environments, especially outdoors**.
The special polyurethane foam compound offers mechanical performance similar to a two-component sole with a compact polyurethane outsole. However, the two-component sole is heavier, more rigid, and less comfortable.
The secret is a lightweight sole made with a low-density compound that offers the same performance as a dual-density sole, providing superior resistance to bending, abrasion, and tearing. 4x4 technology **combines strength and lightness to ensure comfort, durability, and resistance to stress**.

FOR CHALLENGING SURFACES, RUGGED TERRAIN, STONES, GRAVEL AND MUD.

ABRASION RESISTANCE



TEAR RESISTANCE (KN/M)



11

TOTAL PROTECTION IN THE MOST CHALLENGING ENVIRONMENTS

FORTREX®

TECHNOLOGY

11

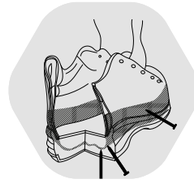
TOTAL PROTECTION IN THE MOST CHALLENGING ENVIRONMENTS

TECHNOLOGY

FORTREX®

COLLECTION WITH FORTREX

> *FORTREX*



On **the sides**, the protection system guards against accidental cuts and perforations from below, extending along the outer edge of the footwear.

Fortrex is a **revolutionary system that uses advanced materials and technologies to provide the best mix of protection, comfort, flexibility, stability, cushioning, and durability**.

FOR THE MOST DEMANDING JOBS IN THE MOST CHALLENGING CONDITIONS.

- Heavy Industry
- Shipbuilding
- Large constructions: railways, bridges, roads, etc.
- Mining
- Agriculture
- Forestry
- Oil & Gas

UNPARALLELED COMFORT

With an excellent fit, breathable materials, and insulating technology for hot and cold temperatures, Fortrex is designed to keep you comfortable even during the most demanding activities and extreme weather conditions. Performance and comfort go hand in hand.

"V" ZONE

FLEXIBLE AREA THAT MOVES AND BENDS NATURALLY WITH YOUR FEET.

EXTENDED PROTECTION

A **W-shaped** ultra-resistant rigid insert is placed in the **rear part of the sole**. Thanks to its shape and composite materials, the shield can deflect and deform nails, preventing perforation. This design protects the foot from below and the sides, even against 3 mm diameter nails.
In the **front part** of the sole, the new generation of flexible ballistic fabric provides protection against perforation from 3 mm nails without restricting foot movement.

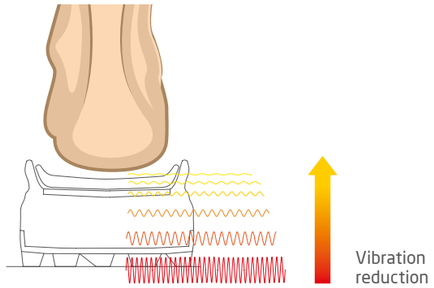
UNPARALLELED COMFORT

The forefoot of the sole is made with ballistic fabric that offers excellent elasticity and flexibility. This advanced **material allows the shoe to move and bend naturally with your foot** while still providing unbeatable protection against perforation.

ENHANCED STABILITY

Fortrex has a rigid insert and strong thermoplastic parts in the **back** to provide maximum stability for the heel and resistance to twisting in the middle part of the shoe.

This design creates **a comfortable fit around the foot, ensuring great control with every movement**.

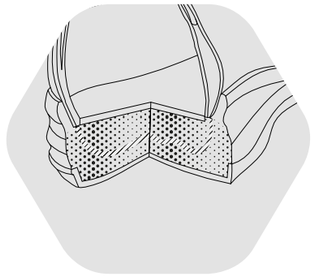


ROBUSTNESS AND DURABILITY

The polyurethane and rubber sole ensures maximum resistance. The upper is designed as a single piece to avoid tears, and the overcap integrated into the sole protects the front part from abrasions, even in the most extreme conditions. The result? **Exceptional durability and high performance in the most demanding** conditions.

SUPERIOR CUSHIONING

The ultra-resistant rigid insert is placed between two layers of soft viscoelastic material, which provides **strong cushioning** to absorb high-impact energy in the heel and relieve pressure on the joints.



VIBRATION ABSORPTION

The sole is **made of layers with different thicknesses** and consistencies to absorb vibrations, protecting the spine and joints.

12

STABILITY WITH EVERY STEP

HiFLAP®

TECHNOLOGY

12

STABILITY WITH EVERY STEP

TECHNOLOGY

HiFLAP®

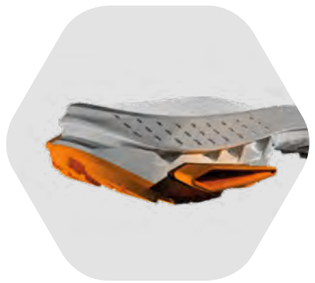
COLLECTION WITH HIFLAP

> *RUN@WORK*

HiFlap technology is a **system made up of several components**:

- sole
- plastic material inserts (devices)
- additional heel support

HiFlap technology **works at maximum efficiency** thanks to the combined function of its components.



ADVANTAGES

- Heel stabilisation
- Prevention of ankle sprains
- Protection of joints and muscles
- Support for correct posture and foot alignment
- Prevention of excessive inclination

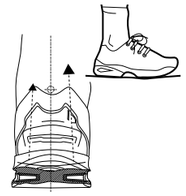
HOW IT WORKS

1

HEEL STRIKE

When the foot makes contact with the ground, typically with the heel, it assumes a supinated position. This means there is a slight outward turn, with the supinator muscles actively stabilising the ankle.

Both devices function asymmetrically, compressing to absorb energy. In the case of excessive supination, the external device counter-thrust minimises the risk of sprains.



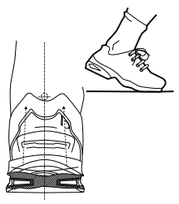
2

MIDSTANCE

The body weight gradually shifts towards the forefoot, which decreases pressure on the heel. The pronator muscles begin to contract in anticipation of the thrust phase.

The devices gradually deactivate, releasing most of the absorbed energy and aiding the transfer of body weight from the heel to the sole. The external device retains a residual amount of absorbed energy, as the foot is still in the supination phase.

Soft pillows support the natural supination phase of the foot, absorbing excess energy and alleviating back pressure on the foot.

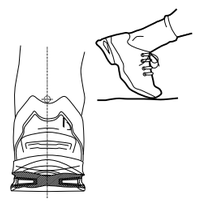


3

HEEL OFF

As the hindfoot lifts, the pronator muscles help create a smooth transition from the midstance to the toe-off phase. The weight gradually shifts more toward the toe.

The devices fully discharge, and the higher residual energy of the external device helps realign the foot to its neutral axis. This assistance from the devices promotes the push phase and reduces the workload on the pronator muscles, easing their effort. Soft pillows support the natural pronation phase during push-off.



4

TOE OFF

The foot is fully pronated, with body weight shifted to the big toe.

The devices are deactivated and ready for the next walking cycle.

13

METATARSAL PROTECTION

HIPROFlex®

TECHNOLOGY

METATARSAL PROTECTION

TECHNOLOGY

HIPROFlex®

COLLECTION WITH HIPROFLEX

> SPECIAL

Metatarsal protection in safety footwear reduces the risk of injuries from falling heavy objects, impacts from machinery or tools, and foot crushing or compression.

HiProFlex technology, integrated into the footwear, ensures both **protection and comfort for the metatarsal area**. Thanks to its special geometry with holes and notches, HiProFlex provides **breathability, flexibility, shock absorption** and **comfort**.

This technology consists of **two overlapping** and welded layers that create interconnections to quickly and evenly dissipate shocks throughout the structure.

The mesh density increases in high-impact areas for better shock absorption and becomes lighter and more flexible in low-risk areas to improve joint mobility. The synergy of these two layers provides optimal **protection against the accidental fall of heavy objects**.

Additionally, the **two wings** that wrap around the foot provide **extra** protection for the sides of the metatarsal area.

THE FEATURES

Through topological design and optimisation, the geometry maximises the material and structure's characteristics. Additionally, the device is designed to integrate seamlessly with the footwear's aesthetics, ensuring it does not alter the appearance.

RESISTANCE AND PROTECTION
AGAINST ELECTROSTATIC PHENOMENA

ESD TECHNOLOGY

min

Conductive footwear
EN ISO 20345 R ≤ 1 x 10^5Ω (0,1 MΩ)
WORKING ENVIRONMENT

10^5Ω

ESD Footwear
EN 61340 - 5 - 1
EN 61340 - 4 - 3
1 x 10^5 ≤ R ≤ 1 x 10^8 Ω
(0,1 to 100 MΩ)
WORKING ENVIRONMENT

10^8Ω

Antistatic Footwear
EN ISO 20345 1 x 10^5 ≤ R ≤ 1 x 10^9 Ω (0,1 to 1000 MΩ)
WORKING ENVIRONMENT

10^9Ω

Insulating Footwear
EN 50321
WORKING ENVIRONMENT

max

EN ISO 20345:2011

SB Basic requirements

S1 SB + closed heel area, antistatic properties, shock-absorption in the heel region + hydrocarbons resistant

S2 S1 + upper resistance for water absorption and penetration

S3 S2 + puncture resistance

EN ISO 20347:2012

OB Basic requirements

O1 OB + closed heel area, antistatic properties, shock-absorption in the heel region + hydrocarbons resistant

O2 O1 + upper resistance for water absorption and penetration

O3 S2 + puncture resistance

The declarations of conformity can be consulted on b2b.baseprotection.com/en/downdoc/ in all languages

SYMBOLS

- VEGAN — Animal-component-free
- 200 Joules resistant toe-cap
- **P** — Puncture resistant sole
- **E** — Shock absorption in the heel region
- **WR** — Water resistant shoe
- **WRU** — Water-resistant upper
- **AN** — Ankle protection
- **M** — Metatarsal protection
- **HRO** — Resistance of the sole to contact heat
- **HI** — Heat insulation up to 150° C, Inside shoe temperature not exceeding 45° C
- **CI** — Cold insulation up to -17° C, Inside shoe temperature not lower than 13° C
- **FO** — Hydrocarbons resistant
- **ESD** — Electronic devices protection from electrostatic discharges
- Men's width (Sizes ≥ 39)
- Women's width (Sizes < 39)
- DGUV112-191 — Suitable for orthopedic insoles, complying with european norms DGUV 112-191
- **A** — Antistatic footwear
- **C** — Conductive footwear
- **CR** — Cut resistant
- **SRA** — Slip-resistant ceramic + detergent
- **SRB** — Resistant steel + glycerine
- **SRC** — SRA + SRB

EN ISO 20345:2022 – EN ISO 20347:2022 STANDARDS

THE NEW STANDARD EN ISO 20345:2022 HAS BEEN IN FORCE SINCE 2022 - AET certifications are valid for 5 years. The EN ISO 20345:2022 and EN ISO 20345:2011 standards will coexist for a while yet. Footwear manufacturers therefore have a transitional period at their disposal to adapt to the new regulations.

HE TIMELINE OF THE APPLICATION OF THE STANDARDS FROM 2021 TO 2028:

*From S1 onwards, **"FO"** becomes a **mandatory** requirement

"FO" is always an **additional requirement

EN ISO 20345:2022+A1:2024 - An amendment to the already existing EN ISO 20345:2022 standard has been released in 2024. This does not constitute a substitution to the standard, but rather clarifies and includes certain aspects of the same.

EN ISO 20345:2022						CLOSED HEEL AREA							
SB	●	●	●	●	●								
S1			SB			●	●	●					
S1P (metal insert)			SB			●	●	●	●				
S1PL (non-metallic insert)			SB			●	●	●		●			
S1PS (non-metallic insert)			SB			●	●	●			●		
S2			SB			●	●	●				●	
S3 (metal insert)			SB			●	●	●	●			●	
S3L (non-metallic insert)			SB			●	●	●		●		●	
S3S (non-metallic insert)			SB			●	●	●			●	●	
S6			SB			●	●	●				●	●
S7 (metal insert)			SB			●	●	●	●			●	●
S7L (non-metallic insert)			SB			●	●	●		●		●	●
S7S (non-metallic insert)			SB			●	●	●			●	●	●

EN ISO 20347:2022						CLOSED HEEL AREA							
OB		●	●	●	●								
01			OB			●	●	●					
01P (metal insert)			OB			●	●	●	●				
01PL (non-metallic insert)			OB			●	●	●		●			
01PS (non-metallic insert)			OB			●	●	●			●		
02			OB			●	●	●				●	
03 (metal insert)			OB			●	●	●	●			●	
03L (non-metallic insert)			OB			●	●	●		●		●	
03S (non-metallic insert)			OB			●	●	●			●	●	
06			OB			●	●	●				●	●
07 (metal insert)			OB			●	●	●	●			●	●
07L (non-metallic insert)			OB			●	●	●		●		●	●
07S (non-metallic insert)			OB			●	●	●			●	●	●

To check product standard updates, please visithttps://www.baseprotection.com/regulations/

STANDARD 2022

REQUIREMENTS	ICON	DESCRIPTION	
BASIC REQUIREMENTS (SB) EN ISO 20345:2022		Vapor permeability.	
		Footwear ergonomics.	
		Durability and technical performance of materials.	
		Impact resistance and compression of the shoe.	
		Slip resistance heel (forward) and toe (backward) on ceramic with cleaner.	NEW
WPA		Resistance to water penetration of the upper.	
A		Antistatic footwear.	
		Closed heel area.	
E		Energy absorption in the heel area.	
P		A) Puncture resistance (according to the old standard **EN ISO 20345:2011**) B) Puncture resistance with metal insert (according to the new standard **EN ISO 20345:2022**)	NEW
PL		Puncture resistance with non-metallic insert with 4.5 mm nail.	NEW
PS		Puncture resistance with non-metallic insert with 3 mm nail.	NEW
FO		Resistance to hydrocarbons.	NEW
SC		Tip Abrasion Resistance.	NEW
LG		Grip on ladder rungs .	NEW
CI		Thermal insulation at low temperatures.	
HI		Thermal insulation at high temperatures.	
HRO		Resistance of the sole to contact heat (1 minute Up to 300° C).	
M		Metatarsal protection.	
AN		Ankle protection.	
CR		Cut resistant.	
WR		Water resistant footwear.	
SR		Slip resistance ceramic + glycerin .	NEW
Ø		**Special marking** Footwear intended for special environments where the requirement for slip resistance on ceramics is not necessary.	NEW
SLIDING ON ROOFS		Slip resistance on pitched roofs (**UNI 11583:2015** standard).	
ESD		Electrostatic dissipation.	
EH		Electrically insulated protective shoe.	NEW

REQUIREMENTS	ICON
BASIC REQUIREMENTS (SB) EN ISO 20345:2011	

CERAMIC AND CLEANING SOLUTION (IN THE BASIC REQUIREMENTS)		CERAMIC AND GLYCERINE (SR)	
REQUIREMENT COF ≥ 0,31	REQUIREMENT COF ≥ 0,36	REQUIREMENT COF ≥ 0,19	REQUIREMENT COF ≥ 0,22

***COF:** Coefficient of friction

feel the comfort

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ISO 14067
BUREAU VERITAS
Certification

ENVIRONMENTAL SYSTEM CERTIFICATION DNV·GL ISO 14001
SAFETY SYSTEM CERTIFICATION DNV·GL OHSAS 18001
QUALITY SYSTEM CERTIFICATION DNV·GL ISO 9001:2015

CONFINDUSTRIA