

removable insoles must be used without insoles, because the introduction of an insole could adversely affect the protective functions.

TABLE I		
Symbol	Requirements / Specifications	Required performance
P	Perforation resistance of sole	≥ 1100 N
E	Energy absorption in heel area	≥ 20 J
A	Anti-static footwear	0.1 to 1000 MΩ
C	Conductive footwear	< 0.1MΩ
See EN 50321	Electrically insulating footwear	
WRU	Water penetration and absorption of upper	≥ 60 min.
CI	Cold insulation	To - 17° C *
HI	Heat insulation	To 150° C
HRO	Heat resistance by contact with sole	To 300° C
FO	Resistance of sole to oils and hydrocarbons	≤ 12 %
WR	Water-resistant footwear	≤ 3 cm <sup>2</sup>
M	Metatarsal protection (for EN ISO 20345 only)	≤ 40 mm (size 41/42)
AN	Protection of malleolus	≤ 10 kN
CR	Resistance to cutting of upper	≥ 2.5 (index)
SRA	Skid resistance on standard ceramic bottom with water lubricant + detergent (Flat Heel)	min. 0,28 min. 0,32
SRB	Disengagement resistance on steel bottom with glycerine lubricant (Flat Heel)	min. 0,13 min. 0,18
SRC	SRA + SRB	

- \* – Scandia shoes, boots, and footwear comply with CE and EN standards.  
 – Cold insulation has been tested to -17°C in accordance with the requirements in EN ISO 20345:2011 p.6.2.3.2.  
 – A voluntary test of footwear insulation was conducted to a temperature of -40°C (based on the requirements specified in CE EN ISO 20345:2011 p.6.2.3.2.). These test results indicate the effectiveness of our footwear's cold insulation to -50°C.

Maximum grip of the sole is normally achieved after the new footwear has undergone a certain "running-in" period (similar to that of car tyres), to remove residues of silicone and releasing agents as well as other physical or chemical surface irregularities. The resistance to slipping can also change depending on the state of wear of the sole. Compliance with the specifications, however does not guarantee the absence of slipping in any condition.

TABLE II		
Additional requirements	EN ISO 20345	EN ISO 20347
	<b>S1 S2 S3</b>	<b>O1 O2 O3</b>
Closed heel area. Anti-static properties (A). Energy absorption in heel area (E). Resistance of the sole to oils and hydrocarbons (FO) (for EN ISO 20345 only)	X X X	X X X
Closed heel area. Antistatic properties (A). Energy absorption in the heel area (E). Water repellent upper (WRU).	X X	X X
Closed heel area. Antistatic properties (A). Energy absorption in the heel area (E). Water repellent upper (WRU). Perforation resistance.	X	X

**\* Perforation of the bottom :**  
 Footwear with SB-P, S1P, S3, OB-P, O1-P, O3 marking.  
**N.B.:** The resistance to perforation, in the case of synthetic composite plates, tends to drop with the diameter of the perforating object. On the other hand this type of lamia has ergonomic advantages (e.g., greater protective surface, flexibility, isolation, absorption of humidity, and impact). Its selection must be based on the risk assessment linked to the real work conditions.

The puncture resistance of this shoe was assessed in the laboratory by means of a 4.5 mm diameter nail with a truncated-conical tip and a force of 1,100 N: Greater puncture forces and nails with a lower diameter increase the risk of perforation.

In these cases, alternative preventive measures must be considered. Currently there are two types of anti-perforation inserts in the shoes (PPE). These may either be metallic or non-metallic. Both types of inserts satisfy the minimum puncture resistance requirements of the standard indicated on these shoes, but each of them has different advantages and disadvantages:

**Metallic anti-perforation insert:**  
 Puncture resistance is less affected by the shape of the sharp object (i.e. the diameter, shape and pointed shape), but due to limitations of the required size for the production of the footwear, it does not cover the entire surface of the lower part of the shoe.

**Non-Metallic anti-perforation insert:**  
 It may be lighter, more flexible and provide greater coverage when compared to the metal insert, but the puncture resistance may vary depending on the shape of the sharp object (i.e. the diameter, shape and, pointed shape).

- Figure I**
- Scandia: Identification mark of manufacturer [www.scandiagear.com](http://www.scandiagear.com)
  - 42 (e.g.) shoe size
  - TX35042 (e.g.) model identification code
  - CE marking certifying conformity with the standard: class of PPE with additional requirements
  - EN ISO 20345:2011 (e.g.) reference standard
  - 11/05 ( e.g.) Month/year of manufacture



**Disclaimer**  
 Scandia Gear is not liable for damages that result from the improper use of these garments.

Made with 100% recycled paper

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# SAFETY FOOTWEAR



## User's Instruction

[www.scandiagear.com](http://www.scandiagear.com)

ROTTERDAM SINGAPORE HOUSTON DUBAI  
 SINCE 1974  
 MARITIME OUTFITTERS



# SAFETY FOOTWEAR

## Thank you for choosing our safety footwear

### Read carefully before using your footwear

Footwear for professional use should be considered as an item of Personal Protection Equipment (PPE) category II. It is subject to the requirements of Directive 89/686/EEC and / or EU Regulation 2016/425 concerning Personal Protective Equipment (PPE) (and subsequent amendments), which envisages obligatory CE marking. Our safety footwear is Class II Personal Protection Equipment which has been awarded CE EU certification by the Notified Body :

CIMAC No. 0465, Via Aguzzafame,  
60/b 19 Vigevano PV Italy.

The EU Declaration of Conformity (DOC) can be obtained through following link : [www.scandiagear.com](http://www.scandiagear.com)

### Materials and manufacture

All the materials used, whether natural or synthetic, and all manufacturing techniques applied have been selected to meet the requirements of the above European technical standard in terms of safety, ergonomics, comfort, solidity, and innocuousness.

### Identifying and selecting the appropriate model

Employers are responsible by law for the suitability of the PPE used for the type of risk present in the workplace and the respective ambient conditions. Before use, make sure that the specifications of the chosen model correspond to the specific requirements for use.

### Protection classes and risk levels

Our safety footwear is designed and manufactured to ensure suitable protection, of the highest possible level, for the type of risk in question. All our footwear have been type-tested based on the methods described in EN ISO 20344:2011. Our footwear also complies with the basic requirements of one of the following standards:

### EN ISO 20345:2011 - Specifications for safety footwear for professional use.

In which "safety footwear for professional use" is

defined as footwear with characteristics developed to protect the wearer against injuries that may derive from accidents in the work sectors for which the footwear was designed, equipped with toe-caps designed to protect against impact ( 200J) and against compression (15kN).

### EN ISO 20347:2011 - Specifications for occupational footwear for professional use.

In which "occupational footwear for professional use" is defined as footwear with characteristics developed to protect the wearer against injuries that may derive from accidents in the work sectors for which the footwear was designed.

As well as the compulsory basic requirements (**SB for EN ISO 20345, OB for EN ISO 20347**), envisaged by the standard, other characteristics may be necessary for both safety footwear and occupational footwear. **Additional requirements** for special applications are marked with symbols (see **table I**) and/or classes (see **table II**). The classes are the most common combinations of basic and additional requirements.

### Meaning of marking (see figure I)

The symbols and classes marked on our products enable you to choose the right type of PPE for the risk in question. Our footwear is not suitable for protecting against risks not indicated in this information sheet, with particular reference to those within the scope of Class III Personal Protection Equipment as defined by Regulation UE 2016/425.

### Recommended uses

Industry in general, light engineering, construction, agriculture, warehouses, public bodies, and the agro-food sector.

### Preliminary checks and use: warnings

Safety footwear meets the relevant safety specifications only if worn properly and in perfect condition. Before use visually inspect to ensure perfect condition and try the footwear on. If it is not in sound condition and shows visible signs of damage such as broken stitching, excessive wear on the sole, breaks or soiling, replace it.

### Use and maintenance For correct use of your footwear

- Select the correct model according to the specific requirements of the workplace and the respective ambient/ atmospheric conditions
- Choose the right size, preferably by trying the footwear on
- When not in use, keep the footwear in a dry, clean, ventilated place
- Check that the footwear is in good condition before each use
- Prior to first worksite use, be sure to lightly roughen the bottoms and sides of your safety shoes soles by rubbing them over a gritty surface
- Clean your footwear regularly with brushes, shop-cloths, rags, etc.: Cleaning intervals depend on the conditions in the workplace
- Periodically treat the upper with suitable polish, wax, or silicone based, etc.
- Do not use aggressive products such as petrol, acids, and solvents, which may adversely affect the quality, safety, and durability of the PPE
- Do not dry your footwear next to or in direct contact with heaters, radiators, and other sources of heat
- Changes or modifications to the environmental conditions (for example, extreme temperatures or humidity) can significantly reduce the performance of the footwear

### Storage

To prevent the risk of deterioration, safety footwear must be transported and stored in its original pack, in a place which is dry and not too hot. New footwear, if taken from the original, undamaged pack, can generally be considered to be suitable for use. Many factors influence the life of footwear during use, making it impossible to establish duration accurately. Generally, footwear made entirely of polyurethane and/or PVC or with a polyurethane and/or PVC outsole, will last for a maximum of 3 years. Other types of footwear will last for a maximum of 5 years.

### Additional information

Anti-static footwear should be used when it is necessary to dissipate electrostatic charges so as to reduce their accumulation to a minimum – thus preventing the risk of fire when working with inflammable substances and vapours – and if the risk of electric shock from an electrical appliance or other equipment under voltage has not been completely eliminated. It must be noted, however, that anti-static footwear cannot guarantee adequate protection against electric shocks because it introduces only an electrical resistance between the

foot and the ground. If the risk of electric shock has not been completely eliminated, additional precautions must be taken. These precautions, together with the additional tests listed below, should form part of the periodic checks envisaged in the programme for preventing accidents in the workplace. Experience has shown that for anti-static purposes, the discharge route through a product must, in normal conditions, have an electrical resistance of less than 1000 MΩ at any moment in the life span of the product. 100 KΩ has been set as a lower limit of resistance for products when new, so as to ensure a certain protection against dangerous electric shocks and fire, in the event that an electrical appliance has defects when operating with voltages of up to 250 V. Users should be informed, however, that in certain conditions, the protection provided by the footwear could be ineffective and that other methods must be used to protect the wearer at any time. The electrical resistance of this type of footwear can be changed significantly by bending, contamination or humidity. This type of footwear will not perform its proper function if worn and used in damp environments. It is therefore necessary to ascertain whether the product will be capable of performing its proper function of dissipating electrostatic charges and providing a certain protection throughout its life span. The user is advised to carry out a test of electrical resistance on site and to repeat it at frequent, regular intervals. If worn for long periods, class I footwear can absorb humidity: in such cases, as well as in wet conditions, it can become conductive.

If the footwear is used in conditions, that cause the material of which the soles are made to be contaminated, the wearer must always check the electrical properties of the footwear before entering a hazardous area. During the use of anti-static footwear, the resistance of the ground must be such that the protection provided by the footwear is not cancelled out. During use, no insulating element must be placed between the mid-sole of the footwear and the foot of the wearer. If an insole is inserted between mid-sole and foot, the electrical properties of the footwear/insole combination must be checked.

### Removable insole

If the safety footwear is equipped with a removable insole, the certified ergonomic and protective functions refer to the footwear complete with its insole. Always use the footwear with its insole in place! Replace the insole only with an equivalent model from the original supplier. Safety footwear without