

# G.R.E.T.A.

## GENERALLY RESISTANT ENOUGH TO ANYTHING

BY WORKSafe

### FEATURES



### USER INFORMATION

This safety footwear complies with the **EU Regulation 2016/425** on personal protective equipment and meets the requirements of the European standard **EN ISO 20345:2022+A1:2024**. It is certified by TÜV SÜD Danmark, Strandvejen 125, 2900 Hellerup, Denmark (Notified Body 2443). EU declaration of conformity can be found at the following link.

<https://www.safety.com.sg/resources>

Safety footwear is designed to minimize the risk of injury by the wearer. It is designed to be used in conjunction with safe working environment and will not completely prevent injury if an accident occurs which exceeds the testing limits of EN ISO 20345:2022+A1:2024.

Safety footwear toecaps designed to give protection against impact when tested at an energy level of at least 200J and against compression when tested at a compression load of at least 15kN. This safety footwear protects the wear's toes against risk of injury from falling objects and crushing when worn in industrial and commercial environments where potential hazards occur.

This safety footwear has been tested against EN ISO 20345:2022+A1:2024 for slip resistance. Ceramic tile floor with sodium lauryl sulphate solution is part of the performance (heel and forefoot). This represents a generic test for assessing performance on water-based contaminants. If the intended conditions of use only involve wet paved surfaces, for example, this can be adequate.

Test conditions	Coefficient of friction
Condition A (forward heel slip)	≥0.31
Condition B (backward forepart slip)	≥0.36

\*Note: Slippage may still occur in certain environments.

Special-purpose footwear containing spikes, metal studs or similar, designed to enhance performance on soft ground (sand, sludge, forestry timber, etc.) should be marked with "Ø". The symbol "Ø" indicates that the footwear has not been tested for slip resistance.

### MARKINGS

Marking on footwear denotes that the footwear is licensed according to the PPE Regulation and it as follows.

Item	Examples of markings
Manufacturer's identification mark	WORKSafe
Number of European standard	EN ISO 20345:2022+A1:2024
Footwear size	6/40
Month and year of manufacturer	12/2024
Category of protection	S7S
Additional property symbols, e.g. SR (Slip resistance on greasy ground)	SR
CE mark	CE

### MARKING CATEGORIES OF SAFETY FOOTWEAR

Category	Class I*										Class II**				Hybrid footwear
	SB	S1	S2	S3	S3L	S3S	S6	S7	S7L	S7S	SB	S4	S5L	S5S	SBH
Properties															
Safety Basic Requirement including Impact Resistant and Compression Resistant Toecap	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Closed Heel Area		X	X	X	X	X	X	X	X	X		X	X	X	
Energy Absorption of Seat Region (E)		X	X	X	X	X	X	X	X	X		X	X	X	
Antistatic Properties (A)		X	X	X	X	X	X	X	X	X		X	X	X	
Water Penetration and absorption (WPA)			X	X	X	X	X	X	X	X					
Penetration Resistant (Metal insert)				X				X							
Penetration Resistant (non-metal insert type PL) (PL)					X				X				X		
Penetration Resistant (non-metal insert type PS) (PS)						X				X				X	
Cleated Outsole				X	X	X		X	X	X			X	X	
Water resistance of whole footwear (WR)							X	X	X	X					

\* **Class I:** Footwear made from leather and other materials excluding all-rubber or all-polymeric footwear.

\*\* **Class II:** All-rubber (i.e. entirely vulcanized) or all-polymeric (i.e. entirely moulded) footwear.

**NOTE 1** For ease of marking, this table categorizes safety footwear with the most widely used combinations of basic and additional requirements.

**NOTE 2** If the footwear is not tested against slip resistance requirement, it is marked with symbol "Ø"

#### Donning:

- Before use, carefully examine the shoes for any tears, holes, cracks
- Slide your foot into the footwear with the removable insock in place.
- Push down the dial and turn it clockwise to tighten the wire laces. Adjust the tightness to your preference.

#### DoFFing:

- Pull up the dial to loosen the wire laces.
- Slide your foot out of the footwear.
- Store it in dry and ventilated area.

Basic testing requirements refer to EN ISO 20345:2022+A1:2024 Table 2.

## ADDITIONAL REQUIREMENTS FOR SAFETY FOOTWEAR

Additional protection can be necessary for safety footwear depending upon risks to be encountered at workplace. In such cases, safety footwear shall conform to the appropriate additional requirements and corresponding marking give below.

Requirement	Classification				Symbol
	Class I	Class II	Hybrid		
			Mounted	Mounted	
Penetration resistance					
Penetration resistance (Metal insert type P)*	X	X	X	X	P
Penetration resistance (Non-metal insert type PL)*	X	X	X	X	PL
Penetration resistance (Non-metal insert type PS)*	X	X	X	X	PS
Electrical properties**					
Partially conductive footwear (Max 100kΩ)	X	X	X	X	C
Antistatic footwear (Range of 100kΩ to 1000MΩ)	X	X	X	X	A
Resistance to inimical environments					
Heat insulation of sole complex	X	X	X	X	HI
Cold insulation of sole complex	X	X	X	X	CI
Energy absorption of seat region (20J)	X	X	X	X	E
Water resistance	X				WR
Metatarsal protection	X	X	X	X	M
Ankle protection	X	X	X	X	AN
Cut resistance	X	X	X	X	CR
Scuff cap	X				SC
Slip resistance on ceramic tile floor with glycerine	X	X	X	X	SR
Upper					
Water penetration and absorption	X				WPA
Outsole					
Resistance to hot contact	X	X	X	X	HRO
Resistance to fuel oil	X	X	X	X	FO
Ladder grip system	X	X	X	X	LG
* One of the three shall be chosen. ** One of the two shall be chosen. <b>NOTE</b> The applicability of a requirement to a particular property is indicated by an X					

## SHOE CARE TIPS

It only takes a minute to care for your shoes. Proper care, storage and wear in correct working environment will add lifespan to the footwear. It also ensures maximum comfort and protection for your feet. The actual wear life for footwear is dependent on the type of footwear, environmental conditions which can affect the wear, contamination and degradation of the product.

- Clean your shoes regularly. Remove any dirt gently with damp cloth or a stiff bristle brush.
- Clean your outsole regularly to prevent clogging of cleats.
- Do not use any caustic cleaning agents
- Always store your shoes in dry ventilated conditions with normal conditions (Temperature, and relative humidity).
- Where footwear is subjected to wet conditions, it is allowed to dry naturally in a cool dry area and not be force dried as this can cause deterioration of the upper material.
- Change your socks regularly for better hygiene.

## WHEN TO REPLACE MY SHOES?

The lifetime of shoe is not endless as shoes may become worn out or damaged. Here are some signs to remind you that it is time to replace your shoes.

### Toecap:

- The material above the steel toecap is abraded and the toecap is visible.
- Toecap is deformed by impact or compression accident.

### The sole:

- The bond has either failed, the entire sole profile is abraded or broken.
- The steel mid-sole is broken or penetrated.

### Shoe body (Shoe upper):

- Broken or torn

\*Expiration date of safety footwear is 2 years from the date of manufacturer.

## PERFORATION RESISTANCE

The perforation resistance of this footwear has been measured in the laboratory using standardized nails and forces. Nails of smaller diameter and higher static or dynamic loads will increase the risk of perforation occurring. In such circumstances, additional preventative measures should be considered. Three generic types of perforation resistant inserts are currently available in PPE footwear. These are metal types and those from non-metal materials, which shall be chosen on basis of a job-related risk assessment. All types give protection against perforation risks, but each has different additional advantages or disadvantages including the following:

**Metal (e.g. S1P, S3):** Is less affected by the shape of the sharp object/hazard (i.e. diameter, geometry, sharpness) but due to shoemaking techniques may not cover the entire lower area of the foot.

**Non-metal (PS or PL or category e.g. S1PS, S3L):** May be lighter, more flexible and provide greater coverage area, but the perforation resistance may vary more depending on the shape of the sharp object/hazard (i.e. diameter, geometry, sharpness). Two types in terms of the protection afforded are available. Type PS may offer more appropriate protection from smaller diameter objects than type PL.

## SLIP RESISTANCE

There is an option to additionally test in the heel and forepart test mode using a ceramic tile floor with Glycerine and performance requirements are specified.

Test Conditions	Coefficient of Friction
Condition C (forward heel slip)	≥0.19
Condition D (backward forepart slip)	≥0.22

If this test is performed and the product meet the performance requirements, then the symbol 'SR' may be added to the marking of the footwear. The test 'SR' is intended as a generic test for assessing performance on more viscous contaminants such as oil. It should be noted that this test condition is particularly demanding and results in this test tend to be inherently low. It is always better to use protective equipment that has been shown to perform well under test conditions that are as similar as possible to the conditions of use.

It should also be noted that neither the mandatory nor the 'SR' test conditions mimic outdoor environments when walking on heavy or loose ground. Under these condition small cleats or narrow footwear tread patterns can become clogged with contamination such as mud or gravel thus leading to a significant reduction in slip resistance.

No footwear can ever provide complete safety under particularly demanding conditions such as spillages of cooking or mineral oil. Under such conditions, slip-resistance footwear can only reduce the risk. Often the only solution in such circumstances is to either prevent contamination in the first place or promptly clean-up the spill.

**Insock:** The footwear is designed to be used with the provided removable insock. Do not replace the insock with anything other than a comparable insock supplied by the original footwear manufacturer or an insock manufacturer that guarantees compatibility with this standard.

## ANTISTATIC FOOTWEAR

Antistatic footwear should be used if it is necessary to minimize electrostatic build-up by dissipating electrostatic charges, thus avoiding the risk of spark ignition of, for example, flammable substances and vapours, and if the risk of electric shock from any electrical apparatus or live parts has not been completely eliminated. It should be noted, however, that antistatic footwear cannot guarantee adequate protection against electric shock as it only introduces a resistance between foot and floor. If the risk of electric shock has not been completely eliminated, additional measures to avoid this risk are essential. Such measures, as well as the additional tests mentioned below, should be a routine part of the accident prevention programme at the workplace.

Experience has shown that, for antistatic purposes, the discharge path through a product should normally have an electrical resistance of less than **1000 MΩ** at any time throughout its useful life. A value of **100 kΩ** is specified as the lowest resistance limit of a product, when new, in order to ensure some limited protection against dangerous electric shock or ignition in the event of any electrical apparatus becoming defective when operating at voltages of up to 250 V. However, under certain conditions, users should be aware that the footwear might give inadequate protection and additional provisions to protect the wearer should be taken at all times.

The electrical resistance of this type of footwear can be changed significantly by flexing, contamination or moisture. This footwear might not perform its intended function if worn in wet conditions. It is, therefore, necessary to ensure that the product is capable of fulfilling its designed function of dissipating electrostatic charges and also of giving some protection during its entire life. It is recommended that the user establish an in-house test for electrical resistance, which is carried out at regular and frequent intervals.

**Class I** footwear can absorb moisture and can become conductive if worn for prolonged periods in moist and wet conditions.

If the footwear is worn in conditions where the soling material becomes contaminated, wearers should always check the electrical properties of the footwear before entering a hazard area.

Where **antistatic** footwear is in use, the resistance of the flooring should be such that it does not invalidate the protection provided by the footwear.

In use, no insulating elements should be introduced between the inner sole of the footwear and the foot of the wearer. If any insert is put between the inner sole and the foot, the combination footwear/insert should be checked for its electrical properties.

## WARRANTY

