

ICS 13.340.50
CCS C73



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 46308-2025

Replacing GB/T 28288-2012

Foot protection - Perforation resistant inserts

足部防护 防刺穿垫

Issued on: August 29, 2025

Implemented on: September 1, 2026

Issued by: Ministry of Emergency Management

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces the section on puncture-proof pads in GB/T 28288-2012 "Foot Protection - Toe Protection Covers and Puncture-Proof Pads". Compared with GB/T 28288-2012, the main technical changes, apart from structural adjustments and editorial modifications, are as follows:

- The scope of application has been changed (see Chapter 1, Chapter 1 of the.2012 edition);
- The terminology and definition concerning toe caps have been removed (see Chapter 3 of the.2012 edition);
- The terminology and definition of puncture-resistant pads have been changed (see 3.1, Chapter 3 of the.2012 edition);
- Added the terminology and definition of the tent effect (see 3.2);
- A new category for puncture-resistant pads has been added (see Chapter 4);
- The technical requirements and corresponding test methods for toe protection caps have been removed (see Chapter 4 of the.2012 edition);
- The relevant requirements in the general provisions of the technical requirements have been deleted (see section

5.1 of the.2012 edition);

---Added general requirements to the technical requirements (see 5.1);

---Added size requirements for non-metallic puncture-resistant pads (see 5.2.2);

---The puncture resistance requirements for non-metallic puncture-resistant pads have been changed (see 5.3.2,

5.2.1 in the.2012 version);

1 Scope

GB 46308-2025 is the Chinese national standard on foot protection - perforation resistant inserts, in the field of environment and health protection, safety. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 29 August 2025 by the Ministry of Emergency Management, and has been in force since 1 September 2026. Classification: ICS 13.340.50, CCS C73. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document provides a classification of puncture-resistant pads, specifies technical requirements and markings, and describes test methods. This document applies to puncture-resistant pads used in foot protection equipment.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 3922-2013 Textiles - Tests for color fastness - Color fastness to perspiration

GB/T 12903 Terminology for Personal Protective Equipment

GB/T 16825.1 Inspection and calibration of static uniaxial testing machines for metallic materials - Part

1.Measurement of tensile and/or compressive stresses by these machines Inspection and calibration of force systems

GB 21148 Foot Protection Safety Footwear

3 Terms and Definitions

The terms and definitions defined in GB/T 12903 and GB 21148, as well as the following terms and definitions, apply to this document.

3.1 Footwear components that are placed within the sole assembly (or close to the sole surface) to provide protection against mechanical penetration.

3.2 tent effect During testing, the puncture-resistant pad exhibited interlayer separation. Some layers were penetrated while others remained intact, creating a tent-like effect. An arched shape.

4 Classification

4.1 According to the material, puncture-resistant pads are divided into metal puncture-resistant pads and non-metal puncture-resistant pads.

4.2 According to the type of protection risk, non-metallic puncture-resistant pads are divided into PL type and PS type.

Note. When facing smaller diameter and sharper objects, the PS type provides more appropriate protection than the PL type.

5.1 General Requirements

5.1.1 When no error is specified in this document (text or images), the maximum error of $\pm 10\%$ shall be used.

5.1.2 The performance requirements and test sample quantity for puncture-resistant pads are listed in Table 1.

Note. This document applies to shoe components, not finished shoes. When selecting puncture-resistant insoles based on the test reports provided in this document, finished shoe manufacturers should ensure proper shoe sizing. The suitability and conformity with the overall performance requirements of the shoe are important reference factors. Table

1 Performance requirements and number of test samples for puncture-resistant pads
Performance Requirements, Clause Number, Metal Puncture-Resistant Pads, Non-Metal Puncture-Resistant Pads, Number of Test Samples Size requirement 5.2 - - 1 pair Puncture resistance 5.3 - - 1 pair Flexural strength 5.4 - - 1 pair Corrosion resistance of metal puncture-resistant pads 5.5.1 - 1 pair Stability of non-metallic puncture-resistant pads 5.5.2 - 1 pair per treatment

Note. "-" indicates the required performance; no "-" indicates that it is not applicable.

5.2 Dimensions

5.2.1 Each metal puncture-resistant pad is permitted to have a maximum of 3 mounting holes, and the diameter of each hole should not exceed 3 mm. (From the puncture-resistant pad...) Starting from the very front end, there should be no holes in the area spanning 10% to 52% of its total length (see the shaded area in Figure 1). Index number explanation. L

---Full length of the metal puncture-resistant pad. Figure

5.3 Puncture resistance

5.3.1 Puncture resistance of metal puncture-resistant pads After testing according to the method specified in 6.2.2.1, the penetration force should not be less than 1100N.

5.3.2 Puncture resistance of non-metallic puncture-resistant pads After testing according to the methods specified in

6.2.2.2 and 6.2.2.3, the test results should meet the requirements of Table 2.