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

GB/T 28288-2012

Replacing GB/T 28288-2012

**Foot protection - Protective toecaps
(English Translation)**

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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 toe protection covers 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);

---Added the terminology and definition for toe protection caps (see 3.1);

---The terminology and definitions for inner and outer protective caps have been changed (see 3.2, 3.3, and 3.1 and 3.2 in the 2012 edition);

---Terminology and definitions related to puncture-resistant pads have been removed (see Chapter 3 of the 2012 edition);

---Added a category for toe protection caps (see Chapter 4);

---The general provisions in the technical requirements have been removed (see section 4.1 in the 2012 edition);

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

- Added appearance quality requirements for non-metallic protective caps (see 5.2);
- The requirements for hem width have been changed (see 5.3.2, 4.2.2 in the 2012 version);
- Added general requirements to the test methodology (see 6.1);
- Added requirements for test reports (see 6.1.3, 6.2.3, 6.3.3, 6.4.3, 6.5.3, 6.6.3);
- The test method for the stability of non-metallic protective caps has been changed (see 6.6, 4.3.6 in the 2012 version);
- The technical requirements and corresponding test methods for puncture-resistant pads have been removed (see Chapter 5 of the 2012 edition);
- The labeling requirements for toe caps have been changed (see Chapter 7, 6.1 of the 2012 edition);
- The labeling requirement for puncture-resistant pads has been removed (see 6.2 in the 2012 edition).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the Ministry of Emergency Management of the People's Republic of China.

The historical release history of this document and the documents it partially replaces is as follows.

---First published in 2012 as GB/T 28288-2012;

---This is the first revision.

Foot protection, toe protection, headband

1 Scope

This document provides a classification of toe protection covers, specifies the technical requirements and markings for toe protection covers, and describes the testing methods.

This document applies to toe protection caps 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 12903 Terminology for Personal Protective Equipment GB/T 20991-2024 Test methods for foot protection footwear 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.

Toe protection cap

Components that provide impact and pressure protection for the toes.

Toe protection caps installed on the inside of the shoe upper at the toe area.

Toe protection caps installed on the outer side of the shoe upper at the toe area.

4 Classification

4.1

According to the material, toe protection covers are divided into metal protection covers and non-metal protection covers.

4.2

According to the installation location, toe protection covers are divided into inner protection covers and outer protection covers.

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 toe protection caps are listed in Table 1.

Note: This document applies to shoe components, not finished shoes. When selecting toe caps based on the test reports provided in this document, finished shoe manufacturers should consider shoe size.

Suitability and conformity with the overall performance requirements of the shoe are important reference factors. Appendix A provides guidelines for selecting the appropriate shoe size and toe cap size.

relation.

Table 1 Performance requirements and number of test samples for toe protection caps

Performance Requirements Clause	Number	Metal Protective Cap	Non-metal Protective Cap
Test Sample Quantity	Appearance quality 5.2 -a	1 pair per pack (size not specified)	
Internal length 5.3.1	-	1 pair per pack size	
Hem width 5.3.2	-	1 pair per pack size	
Impact resistance b 5.4	-	1 pair per pack size	
Pressure resistance b 5.5	-	1 pair per pack (head size)	

5.6.1 Corrosion resistance of metal protective caps - 3 pieces (different cap sizes)

Stability of non-metallic protective cap b 5.6.2 - 1 pair for each treatment A "-" indicates that the performance requirement is met; the absence of a "-" indicates that it is not applicable.

b. When the toe cap itself is designed with holes, the holes are not considered as gaps through which light can pass during evaluation.

5.2 Appearance Quality

The toe cap should be smooth, free of burrs, and free of material or manufacturing defects.

The material layers of the non-metallic protective cap should be free from cracks or delamination.

5.3.1 Internal Length

After testing according to the method specified in 6.2.1, the minimum internal length of the toe protection cap should meet the requirements of Table 2.

Table 2 Minimum internal length of toe protection cap

Protected packet header number	<=5	6	7	8	9	>=10	Minimum internal length/mm.
	34.0	36.0	38.0	39.0	40.0	42.0	

5.3.2 Hem width

After testing according to the method specified in 6.2.2, the width e of the rolled edge of the metal protective bag should not exceed 12mm, and the width e of the rolled edge of the non-metallic protective bag should not exceed 12mm.

The angle e should not exceed 15mm.

5.4 Impact resistance

After testing according to the method specified in 6.3, the minimum spacing inside the toe protection cover should meet the requirements of Table 3, and the toe protection cover should not...