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

GB 31421-2025

Replacing GB/T 31421-2015

Head protection - Occupational antistatic headwear

头部防护 防静电工作帽

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Table of Contents

1	Scope
2	Normative references
3	Terms and Definitions
4	Specifications, dimensions, and structural style
4.1	Specifications and Dimensions
4.2	Structural Style
5	Technical Requirements
5.1	General Requirements
5.1.1	Appearance Quality
5.1.2	Sewing
5.2	Fabric
5.3	Finished Product
6	Test Methods
6.1	General Requirements Test Methods
6.2	Test methods for the physical and chemical properties of fabrics
6.3	Finished Product Testing Methods
7	Mark
7.1	Permanent Identification
7.2	Certificate of Conformity
7.3	Product Manual
8	References

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 GB/T 31421-2015 "Antistatic Work Caps". Compared with GB/T 31421-2015, the only changes are structural adjustments and editing. Aside from the sexual alterations, the main technical changes are as follows:

- a) The scope has been changed (see Chapter 1, Chapter 1 of the 2015 edition);
- b) Added terms and definitions for surface resistivity and half-life (see 3.3, 3.4);

- c) The technical requirements have been categorized and described separately according to fabric technical requirements and finished product technical requirements (see
- d) The following properties of the fabric were modified. air permeability, color fastness to perspiration (color change), abrasion resistance, tear strength, and pH of the uncoated fabric. Technical requirements for the value (see 5.2, 4.4, 4.5, and 4.6 of the.2015 edition);
- e) The test item for dry rubbing color fastness/grade (staining) in the physicochemical properties of noodles has been changed (see Table 1, Table 1 in the.2015 edition);
- f) Increased the technical requirements for light fastness, combined light and perspiration fastness, tensile strength, and odor in the physicochemical properties of noodles (see...). Table 1);
- g) The names and technical requirements for finished product dimensions have been changed (see 4.1,.2015 version 4.1);
- h) Technical requirements for the structure and style of the finished product have been added (see 4.2);
- i) The technical requirements for the appearance quality of finished products have been revised (see 5.1.1, 4.2 of the.2015 version);
- j) Technical requirements for the physical and chemical properties and joint strength of finished products have been added (see 5.3);

1 Scope

GB 31421-2025 is the Chinese national standard on head protection - occupational antistatic headwear, 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 13.340.20, CCS C 73. 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 specifies the technical requirements, marking, packaging, storage, and cleaning of antistatic work caps, and describes the corresponding test methods. This document applies to work caps made primarily of antistatic fabrics, which are worn in locations where there may be a risk of electrostatic discharge. This document does not

apply to antistatic work caps made primarily of non-woven fabric.

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 2912.1 Textiles-Determination of formaldehyde-Part

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 A work cap made primarily of antistatic fabric to prevent the accumulation of static charge on the cap body.

3.2 head circumference The maximum circumference of the head is measured horizontally above both ears.

Note. See Figure 1 in GB/T 16160-2017.

3.3 Surface resistivity The ratio of the potential gradient parallel to the direction of the current passing through the surface of the material to the current per unit width of the surface, i.e., the ratio of the potential gradient to the current per unit area of a square material. The DC resistance between two opposite sides of the material.

Note. Unit. $\Omega/\square$.

3.4 Half-life; HDT The time required for the applied voltage on the sample to decay to half of the peak voltage.

4 Specifications, dimensions, and structural style

4.1 Specifications and Dimensions The net circumference of the human head is used as the standard size for antistatic work caps, expressed in centimeters (cm). Antistatic work cap specifications. The range is 44cm to 64cm, with increments of 1cm.

4.2 Structural Style

4.2.1 Round-topped brimless hat, with no brim design, covering the entire head, some styles have ventilation mesh openings on the top or sides.

4.2.2 Brimmed bowler hat. Based on the bowler hat design, a brim is added to block sunlight or light, suitable for workers who need visual protection. Work environment.

4.2.3 A peaked cap with a stiff brim. The brim has built-in conductive fibers to enhance static dissipation, making it suitable for outdoor work and providing both sun protection and... Anti-static function.

4.2.4 Headscarf (cap), covering the head, neck, and shoulders, with a cross-shaped Velcro closure at the back of the neck for adjustment or a drawstring for adjustment. Tight fit, some styles integrate ear mesh or mask.

5.1.1 Appearance Quality

5.1.1.1 The appearance of the antistatic work cap should be free from damage or other defects that affect its antistatic performance.

5.1.1.2 No obvious oil stains, disassembly marks, defects, or leaks are found on any part.

5.1.1.3 Antistatic work caps should not have metal accessories. If they must be used, the metal accessories should not be directly exposed.

5.1.2 Sewing

5.1.2.1 The stitch length should be 12 stitches/3cm to 16 stitches/3cm.

5.1.2.2 The tension should be appropriate at the top and bottom, with no skipped stitches or broken threads, and there should be a backstitch at the start and end of the stitch.

5.1.2.3 The stitching should be uniform, and no more than two stitches or two places should be missing in the same part.

5.1.2.4 The elastic band should be of moderate tension, and the straps should be tight.

5.1.2.5 Permanent markings should be securely sewn to the product itself.

5.2 Fabric The physical and chemical properties of the fabric shall be tested in accordance with

6.2 and shall meet the requirements specified in Table 1.