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# 中华人民共和国国家标准

National Standard of the People's Republic of China

GB14866—2006

代替 GB/T14866—1993

Replace GB/T14866—1993

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## 个人用眼护具技术要求

The specifications for personal eye-protectors

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Standardization Administration of the People's Republic of China

## 前言

### Foreword

本标准在制定过程中主要参照了 ISO4007:1977《个人用眼护具词汇》、ISO4849:1981《个人用眼护具 技术要求》、ISO4854:1981《个人用眼护具光学性能试验方法》、ISO4855:1981《个人用眼护具 非光学性能试验方法》。另外有部分条款采用了欧洲标准和日本标准，如：

This standard mainly refers to ISO4007:1977 vocabulary of personal eye protectors, ISO4849:1981 technical requirements for personal eye protectors, ISO4854:1981 test method for optical performance of personal eye protectors and ISO4855:1981 test method for non-optical performance of personal eye protectors. In addition, some articles adopt European standards and Japanese standards, such as:

5, 6.3a)中滤光镜透射比相对误差项采用了 EN 166:2001《个人用眼护具 技术要求》的 7.1.5.2;

The relative error item of the transmittance of the filter in 5, 6.3a) adopts 7.1.5.2 of EN 166:2001 Technical Requirements for Personal Eye Protectors;

5.10 中有机镜片表面耐磨性能项采用了 JIS T8147:2003《防护眼镜》的 5.1e);

The wear resistance of organic lens surface in 5.10 adopts JIS T8147:5.1e of 2003 Protective Spectacle;

5.11 中防高速粒子冲击性能项采用了 EN166:2001《个人用眼护具 技术要求》的 7.2.2。

The anti-high speed particle impact performance item in 5.11 adopts 7.2.2 of EN166:2001 Technical Requirements for Personal Eye Protectors.

本标准由国家安全生产监督管理总局提出。

This standard is put forward by the State Administration of Work Safety.

本标准由全国个体防护装备标准化技术委员会(CSBTS/TC 112)归口。

This standard is under the centralized management of National Technical Committee of Standardization for Personal Protective Equipment (CSBTS/TC 112).

本标准起草负责单位:上海市劳动保护科学研究所。

The responsible institution for drafting this standard: Shanghai Institute of Labor Protection Science.

本标准主要起草人:王桂芬、顾建栋、宋毅、唐一鸣。

This standard is primarily drafted by Wang Guifen, Gu Jiandong, Song Yi and Tang Yiming.

本标准代替 GB/T14866—1993《眼面护具通用技术条件》。

This standard replaces GB/T14866-1993 General Technical Requirements for Eye Protectors.



# 个人用眼护具技术要求

## Specifications for Personal Eye-Protectors

### 1 范围

#### 1 Scope

本标准规定了个人用眼护具的技术性能要求及相应的试验方法。

This standard specifies the technical performance requirements and corresponding test methods of personal eye protectors.

本标准适用于除核辐射、X光、激光、紫外线、红外线及其他辐射以外的各类个人眼护具。

This standard is applicable to all kinds of personal eye protectors except nuclear radiation, X-ray, laser, ultraviolet, infrared and other radiations.

### 2 规范性引用文件

#### 2 Normative references

下列文件中的条款通过本标准的引用而成为本标准的条款。凡是注日期的引用文件，其随后所有的修改单(不包括勘误的内容)或修订版均不适用于本标准，然而，鼓励根据本标准达成协议的各方研究是否可使用这些文件的最新版本。凡是不注日期的引用文件，其最新版本适用于本标准。

The terms in the following documents become the terms of this standard by reference to this standard. All subsequent amendments (excluding errors) or revisions to dated reference documents are not applicable to this standard; however, parties agreeing under this standard are encouraged to study whether the latest versions of these documents are available. For undated reference documents, the latest version is applicable to this standard.

GB/T191 包装储运图示标志

GB/T191 Packaging-Pictorial Marking for Handling of Goods

GB/T2428 成年人头面部尺寸

GB/T2428 Head-face Dimensions of Adults

### 3 术语和定义

#### 3 Terms and definitions

本标准采用以下定义。

The following definitions are used in this standard.

##### 3.1

#### 眼护具

##### Eye-protector

防御烟雾、化学物质、金属火花、飞屑和粉尘等伤害眼睛、面部的防护用品。

Protective articles used to protect eyes and faces against smoke, chemicals, metal sparks, flying debris and dust.

##### 3.2

#### 镜片

##### Ocular

防御有害因素伤害眼部的各种透光构件。

Defense against harmful factors that damage various light-transmitting components of the eye.

##### 3.3

#### 眼镜

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### **Spectacle**

镜架内装有镜片的眼护具。

Eye protectors with lens in the frame.

### **3.4**

#### **眼罩**

### **Goggle**

在头带框架内装有单片或双片镜片的眼护具。

Eye protectors with single or double lenses in the headband frame.

### **3.5**

#### **面罩**

### **Face-shield**

遮盖整个或部分面部的眼护具。

Eye protectors that cover the entire or part of the face.

### **3.6**

#### **滤光镜**

### **Filter**

能衰减人射光强度的镜片。

Lens that attenuate the intensity of human light.

### **3.7**

#### **镜片水平基准长度**

### **Optical horizontal reference length**

镜片顶部和底部之间的中心水平基准线长度。

Center horizontal datum line length between top and bottom of lens.

### **3.8**

#### **镜片垂直高度**

### **Optical vertical height**

垂直与镜片水平基准线的中心线长度。

The length of the center line perpendicular to the lens horizontal datum line.

**3.9**

镜片中心范围

**Optical central scope**

距镜片边缘 5mm 以内区域。

Within 5mm from the edge of the lens.

**3.10**

屈光度

**Refractive power**

表征光学系统会聚或发散光束能力的量。其值为光学系统焦距的倒数。单位:l/m;符号:D。

The amount that characterizes the ability of an optical system to converge or diverge beams. The value is the reciprocal of the focal length of the optical system. Unit: L / M; symbol: D.

**3.11**

棱镜度

**Depth of parallelism**

通过一个光学系统,物体的视位移与该物体距离之比的 100 倍。单位:cm/m;符号:Δ。

Through an optical system, the ratio of the apparent displacement of an object to its distance is 100 times. Unit: cm / M; symbol: Δ.

**3.12**

透射比

**Transmission rate**

透射光和人射光强度之比。

The ratio of transmitted light to human light intensity.

**4 分类****4 Classification****4.1 眼护具类型****4.1 Types of eye-protectors**

按外形结构进行分类,见表 1。



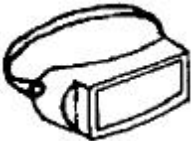







The classification is made according to the shape and structure, as shown in Table 1.

**4.1.1 眼镜****4.1.1 Spectacle****4.1.2 眼罩****4.1.2 Goggle****4.1.3 面罩****4.1.3 Face-shield**

表 1 眼镜类型

Table 1 Spectacle type

名称 Name	样型 Pattern
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眼镜 Spectacle	普通型 Ordinary type		带侧光板型 With side light shield			
						
眼罩 Goggle	开放型 Open type			封闭型 Enclosed type		
						
面罩 Face-shield	手持式 Hand-held	头戴式 head-mounted		安全帽与面罩组合 Combination of helmet and face-shield		头盔式 Helmet type
	全面罩 Full face-shield	全面罩 Full face-shield	半面罩 Half face-shield	全面罩 Full face-shield	半面罩 Half face-shield	
						



## 4.2 镜片类型

### 4.2 Lens type

#### 4.2.1 无机镜片

##### 4.2.1 Inorganic lens

###### 4.2.1.1 非钢化无机镜片

###### 4.2.1.1 Non toughened inorganic lenses

###### 4.2.1.2 钢化无机镜片:通过物理或化学方法使其钢化。

###### 4.2.1.2 Sterilized inorganic lenses: They are toughened by physical or chemical means.

注：由于制造工艺或后处理的结果，钢化镜片抗机械冲击性能比非钢化镜片要好，而且当镜片破裂时产生的尖利碎片比非钢化镜片少。

Note: As a result of the manufacturing process or post-processing, the mechanical impact resistance of the toughened lenses is better than that of the non-toughened lenses, and less sharp debris is produced when the lenses are broken than that of the non-toughened lenses.

#### 4.2.2 有机镜片

##### 4.2.2 Organic lenses

###### 4.2.3 胶合镜片：由黏结剂将多层镜片粘合而成。

###### 4.2.3 Glued lens: it is made of multi-layer lens glued by adhesive.

注：所有类型镜片都可继续细分滤光片类型。也可分为带矫正功能的镜片和不带矫正功能的镜片。也可在表面涂上涂层以获得其他功能。

Note: all types of lenses can continue to subdivide filter types. It can also be divided into lenses with correction function and lenses without correction function. Other functions can also be achieved by coating the surface.

## 4.3 眼护具的功能

### 4.3 Functions of eye-protectors

眼护具的功能是提供保护以及对抗以下伤害：

Function of eye-protectors is to provide protection against:

——不同强度的冲击；

——impact of different strength;

——可见光辐射；

——visible light radiation;

——熔融金属飞溅；

——spatter of molten metal;

——液体雾滴和飞溅；

——liquid droplets and splashes;

——粉尘；

——dust;

——刺激性气体

——irritant gases

或这些类型伤害的任何组合，其基本技术性能参见附录 A。

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Or any combination of these types of injuries, see Appendix A for their basic technical performance.

### 5 技术要求

#### 5 Technical requirements

##### 5.1 材料 material

- a) 佩戴者接触的部分不应使用会引起皮肤刺激的材料;
- a) The part in contact with the wearer may not use materials that cause skin irritation;
- b) 防护部分的材料应满足其功能的需要。
- b) The material of the protective part shall meet the requirements of its function.

##### 5.2 结构 structure

- a) 表面光滑、无毛刺、无锐角或可能引起眼面部不舒适感的其他缺陷;
- a) smooth surface, no burr, no sharp angle or other defects that may cause discomfort in the eyes and face;
- b) 应具有良好的透气性;
- b) have good air permeability;
- c) 可调零件或结构部件应易于调节和替换。
- c) adjustable parts or structural parts are easy to adjust and replace.

##### 5.3 头箍 head band

在与佩戴者接触的任一部分头箍至少应保持 10mm 宽,头箍应能调节,选用的材料应质地柔软,经久耐用。

Any part of the hoop in contact with the wearer shall be at least 10mm wide; the hoop shall be adjustable, and the selected material shall be soft and durable.

##### 5.4 镜片规格 lens specification

- a) 单镜片:长×宽尺寸不小于:105mm×50mm;
- a) Single lens: length \* width not less than 105mm \* 50mm;
- b) 双镜片:圆镜片的直径不小于 40mm;成形镜片的水平基准长度×垂直高度尺寸不小于:30mm×25mm。
- b) Double lenses: the diameter of round lenses is not less than 40 mm; the horizontal reference length \* vertical height size of shaped lenses is not less than 30 mm \* 25 mm.

##### 5.5 镜片的外观质量 appearance quality of lenses

镜片表面应光滑、无划痕、波纹、气泡、杂质或其他可能有损视力的明显缺陷。

The surface of the lens shall be smooth, free from scratches, ripples, bubbles, impurities or other obvious defects that may impair vision.

##### 5.6 光学性能 optical performance

###### 5.6.1 屈光度 refractive power

镜片屈光度互差为 $\begin{matrix} +0.05D \\ -0.07D \end{matrix}$ 。

The refractive power difference between lenses is  $\begin{matrix} +0.05D \\ -0.07D \end{matrix}$ .

### 5.6.2 棱镜度 depth of parallelism

- a) 平面型镜片棱镜度互差不得超过  $0.125\Delta$ ;
- a) The depth of parallelism of plane lens may not exceed  $0.125 \Delta$ ;
- b) 曲面型镜片的镜片中心与其他各点之间垂直和水平棱镜度互差均不得超过  $0.125\Delta$ ;
- b) The mutual deviation of the vertical and horizontal depth of parallelism between the lens center of curved lens and other points may not exceed  $0.125 \Delta$ ;
- c) 左右眼镜片的棱镜度互差不得超过  $0.18\Delta$ 。
- c) The depth of parallelism of the left and right spectacle must not be more than  $0.18 \Delta$ .

### 5.6.3 可见光透射比 visible light transmission rate

- a) 在镜片中心范围内，滤光镜可见光透射比的相对误差应符合表 2 所规定的范围。
- a) Within the central range of the lens, the relative error of the visible light transmission rate of the filter shall conform to the range specified in Table 2.

表 2 滤光镜可见光透射比相对误差

Table 2 Relative error of visible transmission rate of filter

透射比值 Transmission rate	相对误差/% Relative error/%
1~0,179	$\pm 5$
0.179~0.085	$\pm 10$
0.085~0,0044	$\pm 10$
0.0044~0.00023	$\pm 15$
0.00023~0.000012	$\pm 20$
0,000012~0.00000023	$\pm 30$

- b) 无色透明镜片：可见光透射比应大于 0.89。
- b) Colorless transparent lens: the transmission rate of visible light must be greater than 0.89.

### 5.7 抗冲击性能 impact resistance

用于抗冲击的镜片及眼护具，都应经受直径为 22mm、重约 45g 钢球从 1.3m 高度自由落下的冲击。

Lens and eye-protectors used for impact resistance shall withstand the impact of a steel ball with a diameter of 22 mm and a weight of about 45 g falling freely from a height of 1.3 M.

#### 5.7.1 镜片 lens

按 6.2.1 规定的方法测试后，不应发生下列缺陷：

The following defects may not occur after testing according to the method specified in 6.2.1:

- a) 镜片破损:如镜片碎裂为二片或二片以上，或者从钢球冲击的另一表面脱落大于 5mg 的碎片，或者钢球穿透镜片，则可认为该镜片已破损；
- a) lens damage: if the lens is fragmented into two or more pieces, or more than 5 mg of fragments fall off the other surface impacted by the ball, or the ball penetrates the lens, the lens may be considered damaged;
- b) 镜片变形:经钢球撞击后，镜片背面的白纸上出现斑点，则可认为其变形。
- b) lens deformation: after the impact of the steel ball, the white paper on the back of the lens has spots, which can be considered deformation.

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### 5.7.2 眼护具 eye-protectors

按 6.2.2 规定的方法测试后, 不应发生下列缺陷。

The following defects may not occur after testing according to the method specified in 6.2.2:

- a) 镜片破损: 同 5.7.1a);
- a) Lens damaged: same as 5.7.1a);
- b) 镜片变形: 同 5.7.1b);
- b) Lens deformation: same as 5.7.1b);
- c) 眼护具框架破损: 经钢球撞击后, 其分离成几个部分, 或其不再具有装夹镜片的能力, 则可认为其破损。
- c) Damage to the frame of eye-protector: It may be considered damaged if it is separated into several parts after being hit by a steel ball or if it no longer has the ability to clamp the lens.

### 5.8 耐热性能 heat resistance

按 6.3 规定的方法测试后, 应无异常现象出现, 镜片的光学性能在 5.6 规定的范围内无变化。

After testing according to the method specified in 6.3, there shall be no abnormal phenomena and no change in the optical performance of the lens within the range specified in 5.6.

### 5.9 耐腐蚀性能 corrosion resistance

按 6.4 规定的方法测试后, 眼护具的所有金属部件应呈无氧化的光滑表面。

After testing according to the method specified in 6.4, all metal parts of eye-protector shall have a smooth surface without oxidation.

### 5.10 有机镜片表面耐磨性能 abrasion resistance of organic lens surface

按 6.5 规定的方法测试后, 镜片表面磨损率  $H$  应低于 8%。

After testing according to the method specified in 6.5, the wear rate  $H$  of lens surface shall be less than 8%.

### 5.11 防高速粒子冲击性能 anti-high-speed particle impact performance

用于防护高速粒子冲击的眼护具应能承受直径为 6mm、重约 0.86g 的钢球在以表 3 中给出速度的冲击。

Eye-protectors used to protect against high-speed particle impact shall withstand the impact of a steel ball with a diameter of 6 mm and a weight of about 0.86 g at the speed given in Table 3.

防高速粒子冲击眼护具必须带有侧面防护。

Eye-protection against high-speed particle impact must be provided with side protection.

表 3 防护要求

Table 3 Protective Requirements

眼护具种类 Types of eye- protectors	钢球冲击速度 Ball impact velocity		
	低速(L) Low speed (L) $45^{+1.5}_0$ m/s	中速(M) Medium speed (M) $120^{+3}_0$ m/s	高速(H) High speed (H) $190^{+5}_0$ m/s
眼镜 spectacle	+	不适用 Not Applicable	不适用 Not Applicable
眼罩 Goggle	+	+	不适用 Not Applicable
面屏 Face screen	+	+	+

按 6.6 规定的方法测试后，不应发生下列缺陷：

The following defects may not occur after testing according to the method specified in 6.6:

- a) 镜片破损：同 5.7.1a);
- a) lens damage: same as 5.7.1a);
- b) 镜片变形：同 5.7.1b);
- b) lens deformation: same as 5.7.1b);
- c) 眼护具框架破损：同 5.7.2c);
- c) eye-protector frame damage: same as 5.7.2c);
- d) 侧面防护失效:如果侧面防护部分碎裂为二个或更多部分，或让钢球完全穿透，或其部分或完全从眼护具脱离，或其零件部分脱离，则认为防护失效。
- d) failure of side protection: failure of protection is considered if the side protection part is fragmented into two or more parts, or the ball is completely penetrated, or it is partially or completely detached from the eye-protection, or part of its parts is detached.

#### 5.12 熔融金属和炽热固体防护性能 protective properties of molten metals and hot solids

眼护具对眼部提供防护的所有零件的材料应为非金属或经过防熔融金属粘附及抗炽热固体穿透的处理。

All parts of eye-protectors that provide protection to the eye must be made of non-metallic materials or treated with anti-molten metal adhesion and anti-incandescent solid penetration.

- a) 按 6.7.1 规定的方法测试后，若镜片无熔融金属粘附或破损，则此材料合格；
- a) If the lens is not adhered to or damaged by molten metal after testing in accordance with the method specified in 6.7.1, the material is qualified;
- b) 按 6.7.2 规定的方法测试后，在 7s 内没有发现钢球完全穿透镜片，则此材料合格。
- b) If the steel ball is not found to penetrate the lens completely within 7 seconds after testing according to the method specified in 6.7.2, the material is qualified.

#### 5.13 化学雾滴防护性能 protection performance of chemical mist droplets

按 6.8 规定的方法测试后，若镜片中心范围内试纸无色斑出现，则认为合格。

If no stain appears on the test paper within the center of the lens after testing according to the method specified in 6.8, it is considered qualified.

#### 5.14 粉尘防护性能 dust protection performance

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按 6.9 规定的方法测试后，若测试后与测试前的反射率比大于 80%，则认为合格。

If the reflectance ratio after testing and before testing is greater than 80% after testing according to the method specified in 6.9, it is considered qualified.

### **5.15 刺激性气体防护性能 Stimulant Gas Protection Performance**

按 6.10 规定的方法测试后，若镜片中心范围内试纸无色斑出现,则认为合格。

If no stain appears on the test paper within the center of the lens after testing according to the method specified in 6.10, it is considered qualified.

## **6 技术性能试验方法**

### **6 Test methods for technical performance**

#### **6.1 光学性能试验 optical performance test**

##### **6.1.1 屈光度 refractive power**

###### **6.1.1.1 仪器 instrument**

屈光度测试仪，精度为 $\pm 0.01D$ 。

The accuracy of the refractive power is  $\pm 0.01D$ .

###### **6.1.1.2 试验方法 test method**

首先将要测试的镜片划出水平基准线和垂直基准线，确定出镜片中心，分别测试出镜片中心点、水平基准线上和垂直基准线上任一点的屈光度。

Firstly, the lenses to be tested are marked with horizontal and vertical datum lines, the lens center is determined, and the refractive power of any point on the lens center point, horizontal datum line and vertical datum line is tested respectively.

##### **6.1.2 棱镜度 depth of parallelism**

###### **6.1.2.1 仪器 instrument**

棱镜度测试仪。

Depth of parallelism tester.

###### **6.1.2.2 试验方法 test method**

与 6.1.1.2 方法相同。

Same as 6.1.1.2.

##### **6.1.3 可见光透射比 visible light transmission rate**

###### **6.1.3.1 仪器 instrument**

分光光度计，精度为 $\pm 1\%$ 。

The accuracy of the spectrophotometer is  $\pm 1\%$ .

### 6.1.3.2 试验方法 test method

在规定的波长范围内，每隔 10nm 测取镜片透射比的读数，计算出积分平均值。

In the prescribed wavelength range, the transmittance rate of the lens is measured every 10 nm, and the average integral value is calculated.

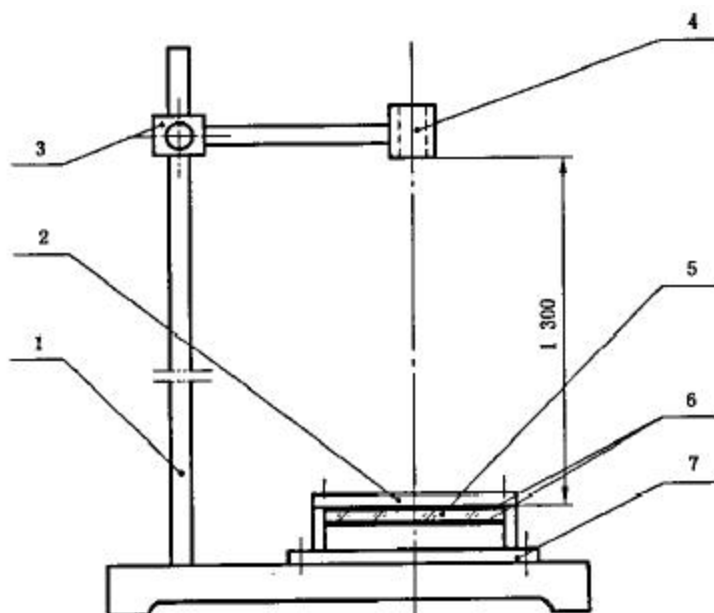
## 6.2 抗冲击性能试验 impact resistance test

### 6.2.1 镜片 lens

#### 6.2.1.1 试验装置 Test device

装置见图 1。基本结构可分上下二个部分，上半部是标高柱，与标高柱连接的部分是定位尺，并可任意调节，上下自由滑动；所需高度可用固定螺栓定位，定位尺的外端有一钢球投放孔，孔的中心对准测试样品的中心。下半部分为样品基座，有钢制圆筒和压圈组成，圆筒的内径比待测镜片的直径小 5mm，压圈的质量为 250g，其内径与圆筒的内径相同，外径略大于圆筒。待测镜片的上、下两个表面各放有一厚度为 3mm，布氏硬度为  $40\pm 5$  的橡胶垫圈，其内径与圆筒相同。对于有曲率的镜片，则圆筒和压圈的曲率应分别与镜片的凹凸面相符。

The device is shown in Figure 1. The basic structure can be divided into two parts, the upper part is an elevation column, and the part connected with the elevation column is a positioning ruler, which can be adjusted arbitrarily and slides freely up and down; the required height can be positioned with fixed bolts, the outer end of the positioning ruler has a steel ball drop hole, and the center of the hole is aligned with the center of the test sample. The lower half is a sample base, consisting of a steel cylinder and a pressing ring. The inner diameter of the cylinder is 5 mm smaller than the diameter of the lens to be measured, and the quality of the pressing ring is 250 g. The inner diameter of the cylinder is the same as that of the cylinder, and the outer diameter is slightly larger than that of the cylinder. The upper and lower surfaces of the lenses to be tested are each provided with a rubber washer with a thickness of 3mm and a Brinell hardness of  $40\pm 5$ , the inner diameter of which is the same as that of the cylinder. For lenses with curvature, the curvature of the cylinder and the pressing ring must correspond to the concave-convex surface of the lens, respectively.



1——标高柱；

1——Standard post;

2——压圈；

2——Press ring;

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- 3——定位支架;
- 3——Positioning bracket;
- 4——钢球投放孔;
- 4——Steel ball drop hole;
- 5——试样;
- 5——Sample;
- 6——橡胶垫圈;
- 6——Rubber gasket;
- 7——试样基座。
- 7——Sample base.

图 1 抗冲击性能试验装置(镜片)

Figure 1 Shock resistance test device (lens)

### 6.2.1.2 试验步骤 test procedure

把垫有橡胶垫圈的镜片安放在圆筒上，把一张白纸和复写纸衬于镜片下，复写纸位于镜片一侧，再用压圈和螺栓固定镜片的位置。调节装置到所需高度，并使钢球与圆筒中心相对，然后，不施加任何动能，使一直径为 22mm、重约 45g 的钢球从 1.3m 高处垂直下落到待测镜片上。

Place the lens with rubber gasket on the cylinder, lined a piece of white paper and copy paper under the lens, the copy paper is located on one side of the lens, and fixed the position of the lens with press ring and bolt. Adjust the device to the desired height and make the ball relative to the center of the cylinder. Then, without applying any kinetic energy, make the ball with a diameter of 22 mm and a weight of about 45 g fall vertically from the height of 1.3 m to the lens to be tested.

### 6.2.1.3 试验温度要求 test Temperature Requirements

对于有机镜片或胶合镜片，测试温度在  $23^{\circ}\text{C}\pm 3^{\circ}\text{C}$  范围内；对于无机镜片，在正常的室温中进行。

For organic lenses or cemented lenses, the test temperature is in the range of  $23^{\circ}\text{C}\pm 3^{\circ}\text{C}$ ; for inorganic lenses, it is carried out at normal room temperature.

### 6.2.2 眼护具 eye-protectors

#### 6.2.2.1 试验装置 test device

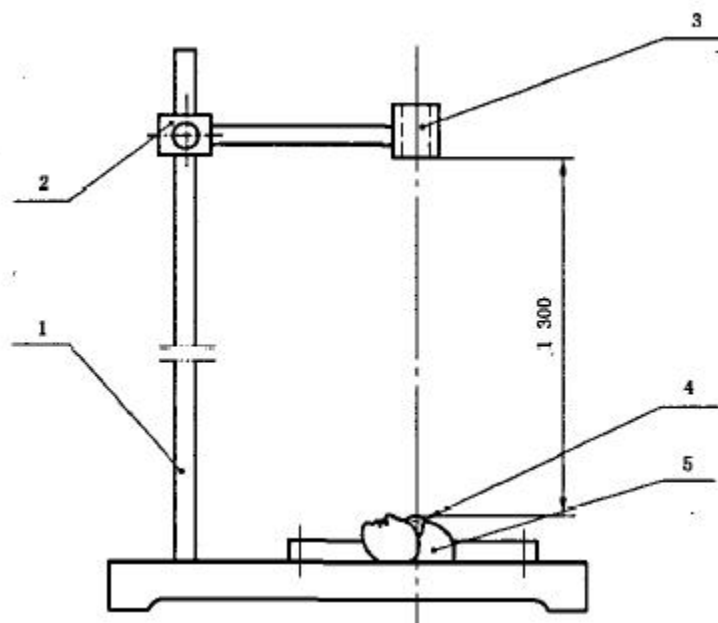
试验装置见图 2。头模由硬木制成，水平放置在底座上，并用螺栓固定其位置。

The test apparatus is shown in Figure 2. The die is made of hardwood, placed horizontally on the base and bolted to its position.

注：本标准中测试用头模应符合 GB/T2428 中成年男子头面部的尺寸要求。

Note: The head mold for testing in this standard shall meet the size requirements of head and face of adult men in GB/T2428.





- 1——标高柱;  
 1——Standard post;  
 2——定位支架;  
 2——Positioning bracket;  
 3——钢球投放孔;  
 3——Steel ball drop hole;  
 4——眼护具;  
 4——Eye-protectors;  
 5——头模。  
 5——Head die.

图 2 抗冲击性能试验装置（眼护具）

Figure 2 Impact resistance test device (eye-protectors)

### 6.2.2.2 试验步骤 test procedure

将待测眼护具按使用的正常位置戴在头模上。头模和眼护具间插入一张白纸和复写纸，白纸在头模一方，复写纸在镜片一方，钢球投放点在眼护具的正上方，着落点为：

Put the eye-protector to be tested on the head mold according to the normal position used. A sheet of white paper and duplicate paper is inserted between the head mold and eye protector. The white paper is on the head mold side, the duplicate paper is on the lens side, and the steel ball is placed directly above the eye protector. The landing point is:

- a) 镜片中心 5mm 范围内;
- a) within 5 mm of the center of the lens;
- b) 框架鼻梁处;
- b) at the nose bridge of the frame;
- c) 框架的二个铰链处。
- c) two hinges of the frame.

### 6.2.2.3 试验温度要求 test Temperature Requirements

The test shall be carried out within 30 seconds after completion of heat preservation.

a) 在试验前把眼护具放入  $55^{\circ}\text{C}\pm 2^{\circ}\text{C}$  的恒温箱内, 保温 1h;

a) Put eye-protectors in a constant temperature box of  $55^{\circ}\text{C}\pm 2^{\circ}\text{C}$  for 1 h before the test;

b) 在第二次试验前, 把眼护具冷却到  $-5^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , 并保温 1h; 对用于低温作业的眼护具, 应冷却到  $-20^{\circ}\text{C}\pm 2^{\circ}\text{C}$  并保温 4h。

b) Before the second test, cool the eye-protector to  $-5^{\circ}\text{C}\pm 2^{\circ}\text{C}$  and keep it warm for 1 h; for the eye protector used for low temperature operation, cool it to  $-20^{\circ}\text{C}\pm 2^{\circ}\text{C}$  and keep it warm for 4 h.

试验应在完成保温后 30s 内实施。

The test shall be carried out within 30 seconds after completion of heat preservation.

### 6.3 耐热性能试验 heat resistance test

把试样放入温度为  $67^{\circ}\text{C}\pm 2^{\circ}\text{C}$  的水中, 保温 3min 后取出, 立即放入  $4^{\circ}\text{C}$  以下的水中, 取出后按 6.1 的方法对其进行光学性能试验。

Put the sample into the water with temperature of  $67^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , take it out after 3 minutes of heat preservation, put it into the water below  $4^{\circ}\text{C}$  immediately, take it out and carry out the optical performance test according to the method of 6.1.

### 6.4 耐腐蚀性能试验 corrosion resistance test

测定眼护具金属组件的耐腐蚀性能, 首先通过清除其粘附物, 然后浸入质量分数 10% 氯化钠沸水溶液, 浸泡 15min。从此溶液中取出, 再浸入质量分数 10% 氯化钠常温水溶液, 浸泡 15min, 取出后勿擦除粘附液, 放在室温下干燥 24h, 然后用温水洗清, 并待其干燥。视表面有无氧化现象。

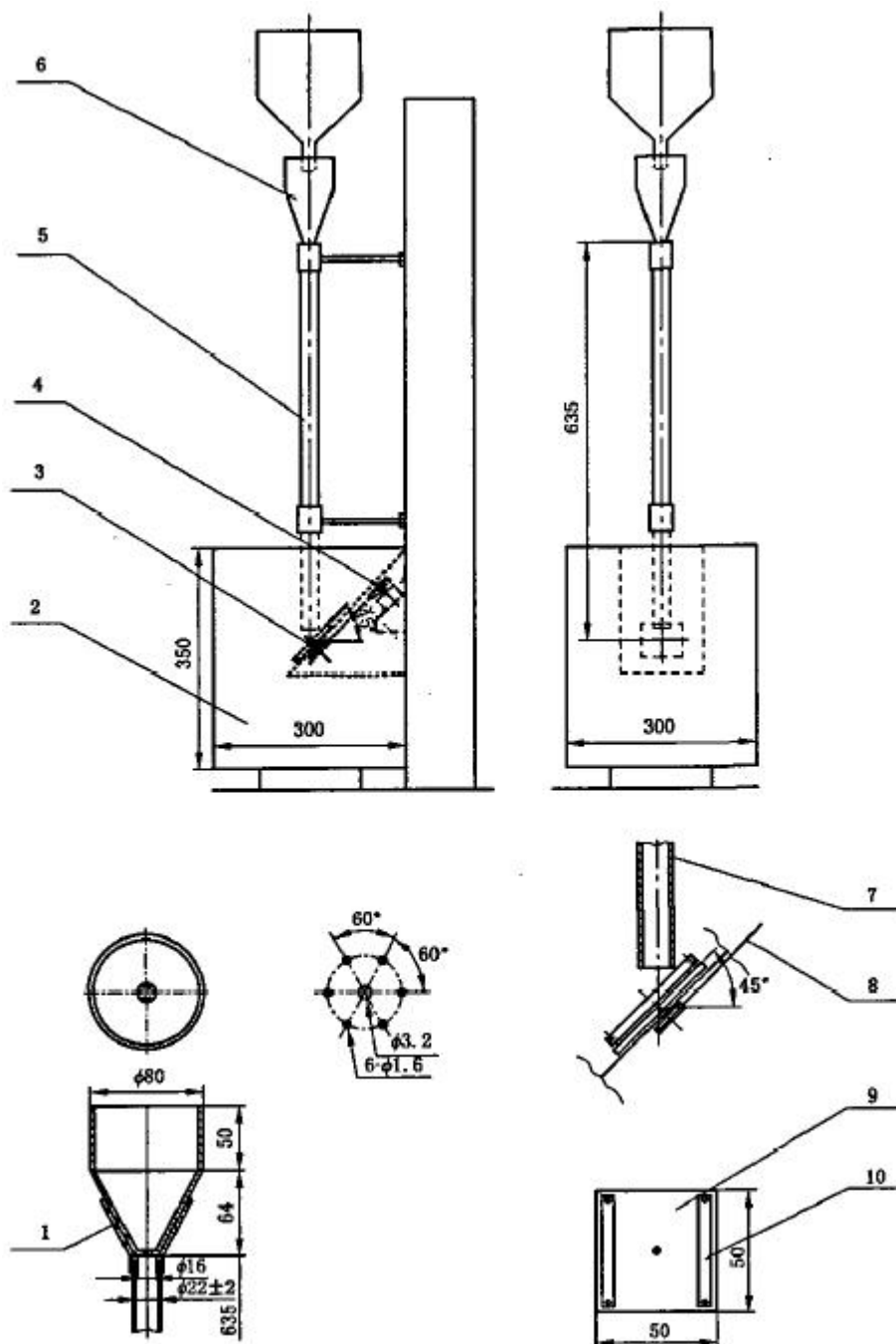
To determine the corrosion resistance of metal components of eye-protectors, firstly, by removing their adhesives, and then immersing them in 10% sodium chloride boiling water solution by mass fraction for 15 minutes. Remove from this solution, then immerse in 10% sodium chloride aqueous solution at room temperature, soak for 15 minutes, do not erase the adhesive after removal, dry at room temperature for 24 h, then wash with warm water, and wait for drying. It depends on whether there is oxidation on the surface.

### 6.5 有机镜片表面耐磨性能试验 surface Wear Resistance Test of Organic Lens

#### 6.5.1 试验装置 test device

试验装置由落砂试验装置(见图 3)和镜片表面磨损率测试仪(或雾度仪)组成。

The test device consists of a sand drop test device (see Figure 3) and a lens surface wear rate tester (or nebulometer).



(a) 漏斗 funnel

(b) 镜片夹持台 lens gripping table

- 1—固定漏斗;
- 1—Fixed funnel;
- 2—磨料承接箱;
- 2—Abrasive bearing box;
- 3—镜片夹持台;
- 3—Lens gripping table;
- 4—电动机;
- 4—Motor;
- 5—导管;

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5—Catheter;

6—漏斗;

6—Funnel;

7—导管;

7—Catheter;

8—皮带;

8—Belt;

9—镜片夹持台;

9—Lens gripping table;

10—夹具。

10—Fixture.

**图 3 落砂试验装置**

**Figure 3 Sand drop test device**

### 6.5.2 试验步骤 test procedure

试验前,先测试样的雾度值,然后把试样装夹到图 3 所示的落砂试验机的转盘上,转盘转动时,落下磨料,清洗镜片表面后,再测定其雾度值,计算其表面磨损率  $H$ 。

Before the test, the mist value of the sample is tested first, and then the sample is clamped on the turntable of the sand-blasting test machine shown in Figure 3. When the turntable rotates, the abrasive is dropped. After cleaning the lens surface, the mist value is measured and the surface wear rate  $H$  is calculated.

镜片表面磨损率  $H$  的计算按式(1)进行:

The calculation of wear rate  $H$  of lens surface is carried out according to formula (1):

$$H = \frac{T_d}{T_e} \times 100 \quad \dots\dots\dots(1)$$

式中:

In the formula:

$H$ ——镜片表面磨损率, %

$H$  - Lens surface wear rate, %

$T_e$ ——全透射率,为全透射光通量与入射光通量的比值;

$T_e$  - Total transmittance, which is the ratio of total transmittance to incident light flux;

$T_d$ ——散射光透射率。

$T_d$  - Transmittance of scattered light.

散射光透射率按式(2)计算。

The transmittance of scattered light is calculated by formula (2).

$$T_d = \frac{T_4 - T_3(T_2/T_1)}{T_1} \quad \dots\dots\dots(2)$$

式中:

In the formula:

$T_d$ ——散射光透射率;

$T_d$ ——Transmittance of scattered light;

$T^1$ ——入射光通量, %;

$T^1$ ——Incident light flux, %;

$T_2$ ——全透射光通量, %;

$T_2$ —— total transmission light flux, %;

$T_3$ ——由于装置所引起的杂散光通量, %;

$T_3$ ——stray light flux due to the device, %;

$T_4$ ——由于装置和镜片所引起的杂散光通量, %。

$T_4$ ——Stray light flux due to device and lens, %.

### 6.5.3 试验条件 test conditions

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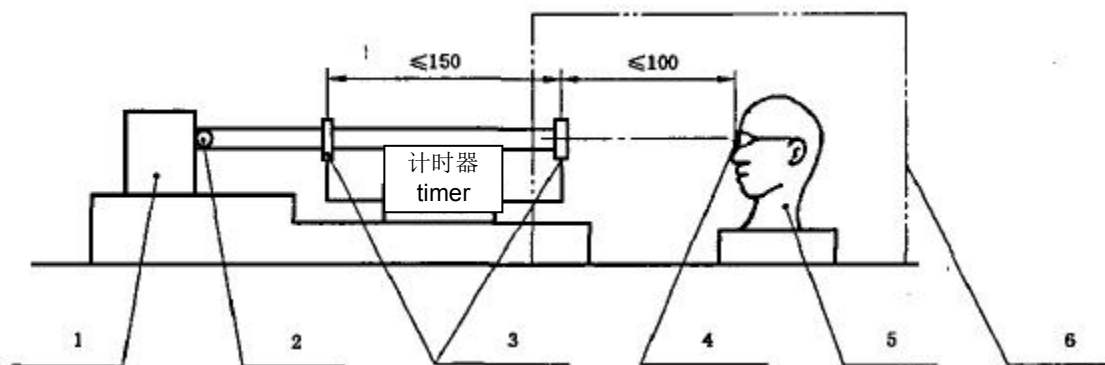
- (1) 磨料质量为 400g;
- (1) Abrasive quality is 400 g;
- (2) 磨料下落量每分钟约为 60g~80g;
- (2) Abrasive drop is about 60g-80g per minute;
- (3) 磨料应垂直下落在镜片中心, 并与镜片表面成 45°;
- (3) The abrasive must fall vertically in the center of the lens, with the well 45 degrees from the lens surface;
- (4) 镜片夹的转速为 5r/min;
- (4) The speed of lens clamp is 5r/min;
- (5) 磨料为人造金刚砂 (SiC), 粒度为 125 μm 以上;
- (5) The abrasive is artificial diamond (SiC) with a particle size of more than 125 μm;
- (6) 磨料每应用 10 次后, 检验一次粒度, 使其在规定的范围内。以使用 50 次为限度。
- (6) After 10 times of abrasive application, check the particle size once to make it within the specified range. Use 50 times as limit.

### 6.6 防高速粒子冲击性能试验 high-speed particle impact resistance test

#### 6.6.1 试验装置 test device

装置由发射器、计时器和标准头模组成, 见图 4。

The device consists of a transmitter, a timer and a standard head mold, as shown in Figure 4.



- 1—动力源;
- 1—Power source;
- 2—钢球;
- 2—Steel ball;
- 3—传感元件;
- 3—Sensor element;
- 4—眼护具;
- 4—Eye-protectors;
- 5—头模;
- 5—Head die;
- 6—防护罩。
- 6—Protective cover.

图 4 抗高速粒子冲击试验装置

Figure 4 High-speed particle impact test device

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标准头模用金属制成，发射器主要由一适当尺寸的钢管组成，并能按表 2 速度发射直径为 6mm 的钢球，钢球位于发射管的尾部，用弹簧或压缩空气提供动力，以保证钢球有一恒定的出射速度和撞击方向。计时器可由传感元件和计时器组成，并能记录钢球通过二传感元件的时间，单位为微秒级，传感元件的距离应不超过 150mm，试样、钢球的弹着点周围都应密封，以防伤人。

The standard head mold is made of metal. The launcher is mainly composed of a steel tube of appropriate size and can launch a steel ball with a diameter of 6 mm at the speed of Table 2. The steel ball is located at the tail of the launching tube and powered by spring or compressed air to ensure that the steel ball has a constant launching speed and impact direction. The timer can be composed of a sensing element and a timer, and can record the time when the steel ball passes through the two sensing elements in microseconds. The distance of the sensing element must not exceed 150 mm. The samples and the balls must be sealed around the bouncing points to prevent injury.

### 6.6.2 试验步骤 test procedure

将待测眼护具按正常使用要求置于标准头模上，眼护具头箍的松紧程度按制造厂说明书调节，用适当尺寸的复写纸和白纸插入镜片和头模之间（复写纸在眼护具的一方，白纸在头模的一方），眼护具和头模的组合装置位于发射器的正前方。从发射管的喷嘴到钢球撞击点的直线距离尽可能小，然后以选定的速度，对准双镜片眼护具的每一镜片中心发射钢球，单镜片眼护具的钢球撞击点处于镜片的中心水平线上，并与其垂直中线各相距 33mm（见图 5）。发射方向应与眼护具镜片表面垂直。

Place the eye-protectors to be tested on the standard head mold according to the normal use requirements, adjust the tightness of the eye-protectors head hoop according to the manufacturer's instructions, insert appropriate size copy paper and white paper between the lens and the head mold (copy paper is on one side of the eye-protectors, white paper is on one side of the head mold), and the combination device of the eye protector and the head mold is located in front of the transmitter. The straight-line distance from the nozzle of the transmitting tube to the impact point of the ball is as small as possible, and then the ball is launched at the center of each lens of the double-lens eye-protectors at the selected speed. The impact point of the ball of the single-lens eye protector is on the center horizontal line of the lens and 33 mm away from its vertical midline (see Figure 5). The direction of emission shall be perpendicular to the surface of eye protection lens.

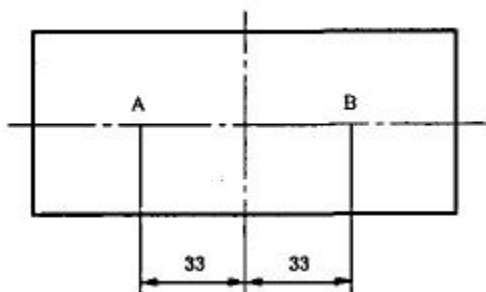


图 5 单镜片的钢球撞击点

Figure 5 Ball impact point of single lens

## 6.7 熔戳金属和炽热固体防护性能试验

### 6.7 Protective performance test of melting stamp metals and hot solids

#### 6.7.1 熔融金属防护性能试验

##### Protective performance test of molten metal

##### 6.7.1.1 试验装置 test device

试验装置如图 6 所示，由一带有抛射头的弹簧加重的活塞组成，抛射头的中心凹陷，用来盛放熔融金属。一固定台架安装在抛射头的上面，其中心孔允许熔融金属通过。熔融金属向上抛射到镜片表面的额定距离为 250mm。

The test apparatus is shown in Figure 6, consisting of a Spring-Weighted piston with a projector head with a central recess used to hold molten metal. A fixed bench is mounted above the projector head with



a central hole allowing molten metal to pass through. The nominal distance at which molten metal is projected upward onto the lens surface is 250 mm.

#### 6.7.1.2 试验步骤 test procedure

把试样固定在规定的位罝, 并对准抛射头中心。加载抛射物, 抛射物为 100g 灰口铸铁, 将抛射物加热到  $1450^{\circ}\text{C}\pm 20^{\circ}\text{C}$  的温度, 放到抛射头上, 释放踏板, 弹簧驱动抛射头垂直向上直到撞击止动板, 抛射物向着试样被抛出。

Fix the sample at the specified position and align the center of the projector. Load the ejector, the ejector is 100g gray cast iron, heat the ejector to the temperature of  $1450^{\circ}\text{C}\pm 20^{\circ}\text{C}$ , put it on the ejector, release the pedal, spring drive the ejector vertically upward until it hits the stop plate, and the ejector is ejected toward the sample.

#### 6.7.2 炽热固体防护性能试验 protection performance test of incandescent solid

##### 6.7.2.1 试验装置 test device

试验装置见图 7, 漏斗由隔热材料制成并与试样中心对准。

The test apparatus is shown in Figure 7. The funnel is made of insulating material and aligned with the center of the sample.

##### 6.7.2.2 试验步骤 test procedure

把试样按要求装入夹具, 预热一直径为 6.5mm 的钢球到  $1030^{\circ}\text{C}$ , 从炉内取出, 立即放进漏斗内, 并开始记录试验时间。

Load the sample into the fixture as required, preheat the steel ball with a diameter of 6.5mm to  $1030^{\circ}\text{C}$ , take it out of the furnace, put it into the funnel immediately, and start recording the test time.

#### 6.8 化学雾滴防护性能试验 Protective performance test of chemical mist droplets

##### 6.8.1 试验装置 test device

6.8.1.1 用一块具有吸收性能的绒布覆盖头模, 绒布的面积质量为  $185\text{g}/\text{m}^2$ 。

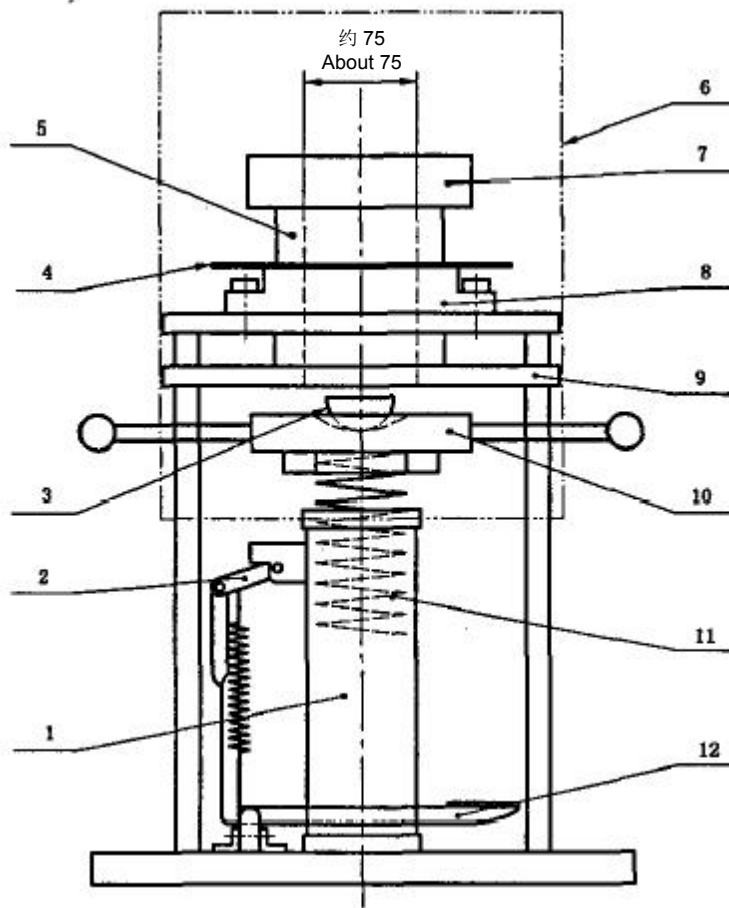
6.8.1.1 Cover the die with a piece of wool cloth with absorbability, and the area mass of the wool cloth is  $185\text{g}/\text{m}^2$ .

6.8.1.2 喷雾器: 能产生细微微滴。

6.8.1.2 Sprayer: It can produce tiny droplets.

6.8.1.3 试纸: 约  $180\text{mm}\times 100\text{mm}$  的白色吸水纸, 浸入浓度为  $0.1\text{mol}/\text{L}$  的碳酸钠溶液。

6.8.1.3 Test paper: white absorbent paper of about  $180\text{ mm} * 100\text{ mm}$ , immersed in  $0.1\text{ mol}/\text{L}$  sodium carbonate solution.



- 1——缸体;
- 1——Cylinder block;
- 2——弹簧释放扳机;
- 2——Spring release trigger;
- 3——抛射物;
- 3——Projectile;
- 4——目镜;
- 4——Eyeglasses;
- 5——夹具;
- 5——Fixture;
- 6——防护罩;
- 6——protective cover;
- 7——压板(重约 7,5kg);
- 7——Press plate (weight about 7,5kg);
- 8——目镜底座;
- 8——eyepiece base;
- 9——止动板;
- 9——Stop plate;
- 10——抛射头;
- 10——Projector;

- 11——弹簧;  
11——Spring;  
12——踏板。  
12——Pedal.

图 6 防熔融金属试验装置

Figure 6 Anti-molten metal testing device

**6.8.1.4** 试剂:将 5g 酚酞溶解到 500mL 的甲醇, 再加 500mL 的水, 不断搅拌, 滤去沉淀物, 以获得 1L 的试剂。

**6.8.1.4** Reagent: Dissolve 5 g of phenolphthalein into 500 mL of methanol, add 500 mL of water, stir continuously, and filter the precipitate to obtain 1 L of reagent.

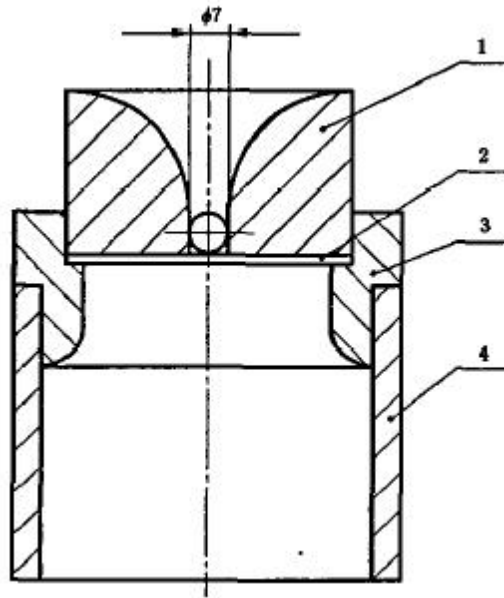
#### **6.8.2 试验步骤 test procedure**

按正常要求将眼护具戴于头模上, 在头模和眼护具间放入试纸。喷射试剂, 水雾以 20mL/min~30mL/min 喷出, 喷雾器和头模相隔 600mm, 喷射时间约为 10s, 从各个方向对头模进行喷射。然后, 查看试样内试纸。

Put eye-protectors on the head mold according to normal requirements, and place test paper between the head mold and eye protector. Spray reagent, spray water mist at 20 mL/min ~ 30 mL/min, sprayer and head die are 600 mm apart, spray time is about 10 s, spray head die from all directions. Then, look at the in-sample test paper.

注: 为安全起见, 建议此项检测在防护罩内进行。

Note: For the sake of safety, it is recommended to test in the protective cover.



- 1—漏斗;
- 1—Funnel;
- 2—试样;
- 2—Sample;
- 3—夹具;
- 3—Fixture;
- 4—支架。
- 4—Bracket.

图 7 防炽热固体试验装置

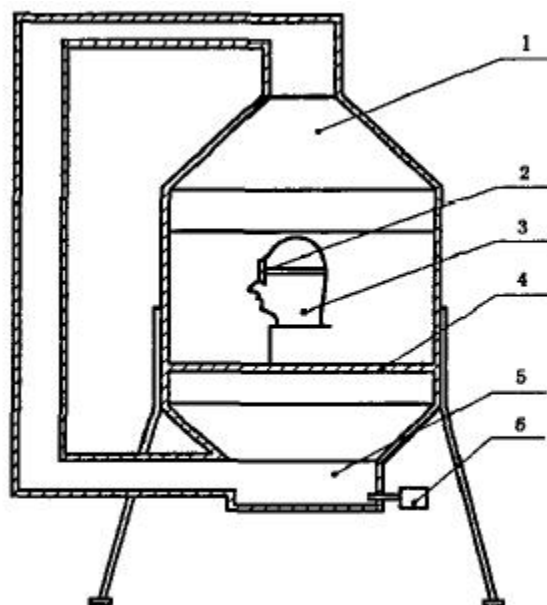
Figure 7 Anti-incandescent solid test device

## 6.9 粉尘防护性能试验 dust protection performance test

### 6.9.1 试验装置 test device

试验装置由发尘柜和光电反射计组成，如图 8,图 9。

The test device consists of a dust cabinet and a photoelectric reflector, as shown in Figure 8 and Figure 9.



- 1——发尘柜（约 560mm×560mm×560mm）；  
 1——Dust cabinet (about 560mm \* 560mm \* 560mm)；  
 2——眼护具；  
 2——Eye-protectors；  
 3——头模；  
 3——Head die；  
 4——阻隔板；  
 4——Barrier plate；  
 5——粉尘收集装置；  
 5——Dust collection device；  
 6——空压机。  
 6——Air compressor.

图 8 发尘柜  
 Figure 8 Dust cabinet

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**6.9.1.1** 发尘柜：内部尺寸为 560mm×560mm,下接一漏斗形底，要求密封，粉尘收集装置连接空气压缩机，其风量约为 2.8m<sup>3</sup>/min，压力为 2255.5Pa,以一个合适的搅拌器，使得从空压机里吹出的气流产生涡动。

**6.9.1.1** Dust cabinet: internal dimension is 560 mm \* 560 mm, next to a funnel-shaped bottom, it is required to be sealed, dust collection device is connected to the air compressor, its air flow is about 2.8 m<sup>3</sup>/min, the pressure is 2255.5 Pa, with a suitable mixer, so that the air flow from the air compressor produces eddy.

**6.9.1.2** 试验粉尘:1000g 煤粉放进发生箱，煤粉的粒径如表 4。

**6.9.1.2** Test dust: 1000g pulverized coal is put into the occurrence box, and the particle size of pulverized coal is as shown in Table 4.

**表 4 煤粉的粒径**

**Table 4 Particle size of pulverized coal**

滤网的额定网孔径/ $\mu\text{m}$ Nominal mesh aperture/ $\mu\text{m}$ of filter screen	通过的百分比/% Percentage /%
250	95
125	85
90	40

**6.9.1.3** 用一块有吸收性能的绒布覆盖头模，绒布的面积质量为 185g/m<sup>2</sup>，试样按要求固定在头模。绒布和试样间放一张潮湿白纸，在白纸上用铅笔标上直径为 57mm 的 2 个圆，其中心的水平间距为 66mm。

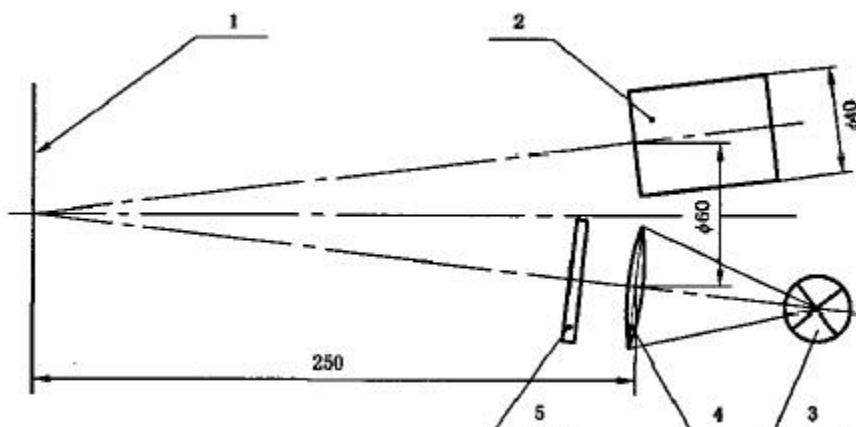
**6.9.1.3** Cover the die with a piece of absorbent wool cloth, the area mass of the wool cloth is 185g/m<sup>2</sup>, and the sample is fixed to the die as required. A wet white paper was placed between the flannel and the sample, and two circles with a diameter of 57 mm were marked on the white paper with a pencil, with a horizontal distance of 66 mm between the centers.

**6.9.1.4** 光电反射计:用于反射率的测量。

**6.9.1.4** Photoelectric reflectometer: used for the measurement of reflectance.

仪器组成:干涉片，透镜,水银灯(放置在透镜的焦点处)以及传感器，如图 9。

Instrument composition: interference sheet, lens, mercury lamp (placed at the focus of lens) and sensor, as shown in Figure 9.



- 1——白纸;
- 1——White paper;
- 2——传感器;
- 2——Sensor;

- 3——水银灯；  
 3——Mercury lamp;  
 4——透镜；  
 4——Lens;  
 5——干涉片( $\lambda \approx 546\text{nm}$ )。  
 5——Interference sheet ( $\lambda \approx 546\text{ nm}$ ).

图 9 光电反射计

Figure 9 Photoelectric reflectometer

### 6.9.2 试验步骤 test procedure

粉尘试验前，先测试白纸的反射率。

Before dust test, test the reflectivity of white paper.

然后将安装试样的头模放入发尘箱，关紧玻璃罩，开动空压机，保持 1min，直到粉尘全部沉降，小心地取出白纸，测试其反射率，然后计算其粉尘试验前后的反射率比。

Then put the head mold of the sample into the dust box, close the glass cover, start the air compressor and keep it for 1 min until the dust settles completely. Carefully take out the white paper, test its reflectivity, and then calculate its reflectivity ratio before and after the dust test.

### 6.10 有刺激性气体防护性能试验 Stimulant Gas Protection Performance Test

#### 6.10.1 试验装置 test device

**6.10.1.1** 试验柜:一个密封性良好的玻璃罩，其内部尺寸为 560mm×560mm,以及一个密封并装有铰链的盖。试验柜借助于鼓风机通气，鼓风机的风量为 1.4cm<sup>3</sup>/s，排气管接到外面大气中。

**6.10.1.1** Test cabinet: a well-sealed glass cover with an internal dimension of 560 mm \* 560 mm and a cap sealed and hinged. The test cabinet is ventilated by a blower with the air volume of 1.4 cm<sup>3</sup>/s and the exhaust pipe is connected to the outside atmosphere.

**6.10.1.2** 刺激性气体供给:采用氨气发生器，制取浓度约为 0.89g/mL 的氨气溶液，氨气发生器与试验柜连接。

**6.10.1.2** Stimulant gas supply: ammonia generator is used to produce ammonia solution with concentration of about 0.89g/mL, and the ammonia generator is connected with the test cabinet.

**6.10.1.3** 硝酸汞溶液:用 1mL 的质量分数为 65%~68%浓硝酸与蒸馏水配制成 100mL 硝酸溶液，然后加入 10g 的硝酸汞粉末。

**6.10.1.3** Mercury nitrate solution: 100 mL of nitric acid solution was prepared with 1 mL of concentrated nitric acid with mass fraction of 65%-68% and distilled water, and then 10 g of mercury nitrate powder was added.

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**6.10.1.4** 试纸:用 180mm×100mm 的白色吸水纸,无硫化物,浸入已配制成的硝酸汞溶液,然后放入试验柜内及头模和眼护具之间。

**6.10.1.4** Test paper: The prepared mercury nitrate solution is immersed in 180 mm \* 100 mm white absorbent paper without sulfide, and then placed in the test cabinet and between the head mold and eye-protector.

### 6.10.2 试验步骤 test procedure

将具有良好吸附性能的绒布覆盖头模,绒布的面积质量为 185g/m<sup>2</sup>,以双层厚度放置。然后按要求把试样固定在头模上。在头模和眼护具之间放入试纸,将其放进毒气柜,试验柜内的氨气量由试纸控制。打开氨气发生器,将氨气注入试验柜,待柜中的试纸呈褐色时,关闭试验柜进气孔后,让试样在氨气中保留 5min。待试验柜内的气体清除干净后,取出试样,同时查看试样内试纸。

The wool cloth with good adsorption performance was covered with the head mold, and the area mass of the wool cloth was 185 g/m<sup>2</sup>, which was placed in the double layer thickness. Then fix the sample on the die as required. A test paper is placed between the head mold and the eye-protector and put into the poison gas cabinet. The amount of ammonia in the test rejection is controlled by the test paper. Open the ammonia generator and inject the ammonia into the test cabinet. When the test paper in the cabinet is brown, close the air inlet hole of the test cabinet and let the sample be kept in ammonia for 5 minutes. After the gas in the test cabinet is cleaned up, take out the sample and check the test paper in the sample.

## 7 包装、标志、储运

### 7 Packaging, marking, storage and transportation

#### 7.1 包装 Packaging

产品应有合适的包装,并且必须附有产品合格证和使用说明书。

The product must be properly packaged and must be accompanied by a product certificate and a user's manual.

#### 7.2 标志 Marking

在产品表面不妨碍视野的地方,应表示制造厂名或商标,在包装上应有下列标识:

Where the product surface does not obstruct vision, the name or trademark of the manufacturer shall be indicated, and the following marks shall be placed on the packaging:

- 1) 产品名称;
- 1) product name;
- 2) 功能标识;
- 2) functional identification;
- 3) 制造厂名;
- 3) name of manufacturer;
- 4) 生产日期。
- 4) production date.

#### 7.3 储运 Transportation

产品在储藏和运输的过程中,应满足下列条件:

During storage and transportation, the product shall meet the following conditions:

- 1) 应保持清洁,禁止与酸、碱及其他有害物接触;
- 1) keep clean and prohibit contact with acid, alkali and other harmful substances;
- 2) 防止雨淋、重压,要轻拿轻放,防止破碎;
- 2) prevent rain and heavy pressure, handle lightly and lightly to prevent crushing;



- 3) 包装箱运输标志应符合 GB/T191 的规定。
- 3) the shipping mark of the packing box shall comply with the provisions of GB/T191.

附录 A  
Appendix A  
(资料性附录)  
(Informative)

眼护具在不同场合的应用

Application of eye-protectors in different situations

序号 Order number	技术要求 Technical specifications	标识 Identification	标准条款 Standard clauses	眼护具 Eye-protectors			试验方法(条款) Test method (clause)	备注 Remarks		
				眼镜 Spectacle	眼罩 Goggles	面罩 Face-shield				
1	光学性能 Optical performance		5.6	+	+	+	6.1			
2	抗冲击性能 Impact resistance		5.7	+		+	6.2			
3	耐热性能 Heat resistance		5.8	+	+	+	6.2			
4	耐腐蚀性 Corrosion resistance performance		5.9	+	+	+	6.4	适用于有金属部件的眼护具 Suitable for eye-protectors with metal parts		
5	有机镜片表面耐磨性能 Abrasion resistance of organic lens surface		5.10	+	+	+	6.5	适用于有机材料制成的眼护具 Suitable for eye-protectors with organic materials		
6	防高速粒子冲击性能 Anti-high velocity particle impact performance	低速 Low speed	L	5.11	+	+	+	6.6	冲击速度为 45 <sup>+1.5</sup> 0m/s The impact velocity is 45+1.50m/s.	
		中速 Medium speed	M		0	+	+			冲击速度为 12 <sup>+3</sup> 0m/s The impact velocity is 12+30m/s.
		高速 High speed	H		0	0	+			冲击速度为 19 <sup>+5</sup> 0m/s The impact velocity is 19+50m/s.
7	熔融金属和炽热固体防护性能 Protective properties of molten metals and	9*	5.12	0	+	+	6.7			

	hot solids							
8	化学雾滴防护性能 Protection performance of chemical mist droplets	3	5.13	0	+	+	6.8	
9	粉尘防护性能 Dust protection performance	4	5.14	0	+	0	6,9	
10	刺激性气体防护性能 Stimulant Gas Protection Performance	5	5.15	0	+	0	6.10	

注:

Note:

+——允许应用;

+——Allowed;

0——禁止应用,

0——Not applicable,

\*——9号镜框与印有9号码为L、M或H的镜片配合使用。

\*——No. 9 frame is used with lenses printed with No. 9 as L, M or H.

中华人民共和国  
People's Republic of China  
国家标准

National standard  
个人用眼护具技术要求

**Technical requirements for personal eye  
protectors**

GB 14866—2006

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