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**Protective clothing—Protection
against heat and flame—General
recommendations for selection, use,
care and maintenance of protective
clothing**

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In the event of any doubts arising as to the contents,
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Foreword

This Japanese Industrial Standard has been revised by the Minister of Health, Labour and Welfare and the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Safety Appliances Association (JSAA)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS T 8006:2005**), which has been technically revised.

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Protective clothing— Protection against heat and flame— General recommendations for selection, use, care and maintenance of protective clothing

Introduction

This Japanese Industrial Standard has been prepared based on **ISO/TR 2801:2007**, Edition 1, with some modifications of the technical contents in consideration of convenience in usage.

The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JA.

1 Scope

This Standard sets out guidance for the selection, use, care and maintenance of clothing designed to provide protection against heat and flame (hereafter referred to as protective clothing).

NOTE The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO/TR 2801:2007 *Clothing for protection against heat and flame—General recommendations for selection, care and use of protective clothing* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS L 0001 *Textiles—Care labelling code using symbols*

JIS T 8005 *Protective clothing—General requirements*

NOTE Corresponding International Standard: ISO 13688 *Protective clothing—General requirements*

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

3.1

hazard

factors or situations that can cause damage to the human body or harm to the health

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### 3.2

#### **risk**

combination of the extent of a hazard present and the probability of the occurrence of the hazard, i.e. the combination of the probability of the occurrence of a hazard in a particular situation and the consequences or extent of harm to the individual to be expected from the hazard

### 3.3

#### **selection**

the process of determining the type of protective clothing assembly (garment) that is necessary for the required protection

### 3.4

#### **use**

application of protective clothing based on the performance

### 3.5

#### **care**

keeping protective clothing in good working order, including procedures for cleaning, decontamination and storage

### 3.6

#### **maintenance**

procedure for inspection, care and repair with the aim of retaining the protective properties and preventing excessive deterioration of the clothing

### 3.7

#### **compatibility**

interference of overlapping parts that occurs when wearing multiple protective equipment and a response to it

NOTE Compatibility may require consistency of performance between products.

### 3.8

#### **cleaning**

means for decontamination e.g., domestic cleaning, professional cleaning and industrial cleaning

NOTE Cleaning procedures are specified in **JIS L 1930**, **JIS L 1931-2**, **JIS L 1931-3**, **JIS L 1931-4**, **ISO 15797**, etc.

### 3.9

#### **user**

person wearing protective clothing

NOTE The term indicates an organization and an individual using protective clothing (workers, supervisors, managers, operators, employers, etc.)

### 3.10

#### supplier

manufacturers, distributors, importers, service providers, etc. of protective clothing

NOTE Service providers include laundry operators, processors, repairers, and collection and delivery companies.

## 4 Selection

### 4.1 General

Subject to requirements, the process of selecting protective clothing can be divided into a number of stages.

### 4.2 Risk assessment

The process of carrying out a risk assessment should include:

- identification of the activities to be undertaken by the person(s) who will require to wear the protective clothing;
- a list of the hazards present;
- a quantification of the risks that would result from exposure to the hazards;
- considerations of the protection provided by other control measures before the application of personal protective equipment (PPE);
- determination of the level (4.3) and extent of protection required from the protective clothing;
- determining whether adding accessories to a garment may increase the risk

Example Adding a badge may create a raised surface to which molten splash can cling.

NOTE A number of risk assessment models may be used to determine the level of risk associated with the activities. Annex B gives reference to some of the existing documents on this subject.

### 4.3 Defining the level of protection required for each activity from the protective clothing

The process of defining the level of protection required for each activity from the protective clothing shall include:

- determining what parts of the body require protection;
- determining the level(s) of protection required (for the relevant parts of the body) for each item of protective clothing;
- identifying the appropriate standard or test method which will provide the protection required.

NOTE 1 As other evaluation, the following evaluation items may be necessary for deciding the selection method according to the risk in the activity.

- instrumented manikin testing;
- laboratory testing;

- assessment of/behaviour after laundry/cleaning;
- assessment of/behaviour after decontamination;
- assessment of/behaviour after UV exposure;
- abrasion resistance;
- chemical repellency.

NOTE 2 Annex C provides a list of hazards, examples of hazards and applicable standards.

#### 4.4 Collecting information on available protective clothing

The process of collecting information on available protective clothing shall include:

- carrying out market research to determine products that are available;
- obtaining information from the potential suppliers on performance levels and handling of protective clothing;
- collecting information on cases of protective clothing used in similar activities;
- ensuring compatibility between all personal protective equipment used simultaneously.

NOTE 1 Examples of other matters that may be necessary to collect information on the availability of protective clothing are as follows:

- training offered for users as part of the procurement package (including training provided by third parties);
- post procurement service offered;
- quality assurance measures in place prior to the delivery;
- requirements for cleaning and decontamination;
- inspection and maintenance requirements;
- replacement requirements and costs for components;
- delivery time for standard and special sizes;
- available size variation;
- stock items held by the supplier;
- collection and delivery arrangements;
- necessity of stock held within the organization;
- organizing internal distribution to the users after procurement;
- safe disposal of protective clothing;
- incorporation of corporate/role identity without affecting performance.

When the employer provides a number of items of protective clothing for different tasks/activities, the employer may provide appropriate training to the wearer of the protective clothing and permit them to select the item(s) of protective clothing. Any selection made by the wearer of the protective clothing shall be based upon the risk assessment carried out by the employer or based upon a dynamic risk assessment by the wearer at the time of use.

NOTE 2 Annex A provides a list of the relevant standards for clothing designed to provide protection from heat and flame.

#### 4.5 Assessment by wearer trials for selection

The purpose of a wearer trial is to assess the compatibility and the ergonomic practicality of the protective clothing. Obtaining feedback from the intended users is imperative at this stage, as such information will provide valuable data relating to the practical performance of the protective clothing.

NOTE 1 A wearer trial gives confidence to the users, thus ensuring that the selected items are used.

When conducting wearer trials, the following issues should be considered:

- ease and speed of putting on and taking off;
- ease and extent of adjustability;
- acceptance in terms of comfort and weight;
- compatibility with all other items of PPE used simultaneously;
- ability to undertake all tasks expected without hindrance or difficulty;
- preservation of the protection in all working positions;
- whether adding accessories to a garment may increase the risk.

NOTE 2 The positioning (e.g. whether it is in a high risk area) and the type of an accessory (e.g. whether it is flame retardant) should be considered.

When wearer trials are conducted, a systematic approach shall be adopted taking into account the following:

- a) participants shall be selected based on a cross section of the relevant occupational group (height, weight, age, gender, etc.);
- b) participants shall evaluate individually each item of the protective clothing assembly they wear;
- c) evaluation feedback shall be obtained in a structured manner allowing for data collection and analysis:

This should be achieved by using a questionnaire, interviews and/or group discussions;

- d) the number of participants should be sufficient to ensure that the results obtained are statistically significant and representative of the total workforce.

## 5 Use

### 5.1 General

After the selection of the protective clothing, a number of stages shall be followed to ensure its correct use.

### 5.2 Training

All employees/users shall be trained how to use their protective clothing correctly, prior to the equipment being introduced into active service. Such training shall include: