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(JSAA/JSA)

**Protective clothing — Gloves and arm
guards protecting against cuts and
stabs by hand knives — Part 2: Gloves
and arm guards made of material other
than chain mail**

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

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Health, Labour and Welfare and the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal of establishing a Japanese Industrial Standard from Japan Safety Appliances Association (JSAA)/Japanese Standards Association (JSA), with a draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

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JIS T 8121 consists of the following 3 parts, under the general title *Protective clothing—Gloves and arm guards protecting against cuts and stabs by hand knives*:

Part 1 : *Chain-mail gloves and arm guards*

Part 2 : *Gloves and arm guards made of material other than chain mail*

Part 3 : *Impact cut test for fabric, leather and other materials*

Protective clothing—Gloves and arm guards protecting against cuts and stabs by hand knives—Part 2: Gloves and arm guards made of material other than chain mail

Introduction

This Japanese Industrial Standard has been prepared based on the first edition of ISO 13999-2 published in 2003 with some modifications of the technical contents in order to conform to the actual domestic situation.

The portions underlined with dots in this part of JIS T 8121 are the matters in which the contents of the corresponding International Standard have been modified. A list of modifications with the explanations is given in Annex JA.

1 Scope

This part of JIS T 8121 specifies requirements for the design, cut resistance, penetration resistance, and ergonomic characteristics of cut-resistant gloves, arm guards and protective sleeves made of materials other than chain mail and rigid metal and plastics. They provide less cut and stab protection than the products specified in JIS T 8121-1 and are intended to be used only in work where the knife to be used has the blade width wider than 12.5 mm at the position 20 mm away from the tip of the blade or it is used only to cut away from the hand and arm.

NOTE : The International Standard corresponding to this part of JIS T 8121 and symbol which denotes the degree of correspondence are as follows.

ISO 13999-2 : 2003 *Protective clothing—Gloves and arm guards protecting against cuts and stabs by hand knives—Part 2: Gloves and arm guards made of material other than chain mail* (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.

2 Normative references

This following standards contain provisions which, through reference in this text, constitute provisions of this part of JIS T 8121. If the indication of the year is given to these referred standards, only the edition of indicated year applies but the revision and amendment made thereafter do not apply. The normative references without the indication of the year apply only to the most recent editions (including amendments).

JIS L 0217 *Care labelling of textile goods*

JIS L 1018 *Test methods for knitted fabrics*

NOTE : Corresponding International Standard : **ISO 3175-2** *Textiles—Dry cleaning and finishing—Part 2: Procedures for tetrachloroethene* and **ISO 6330** *Textiles—Domestic washing and drying procedures for textile testing* (Overall evaluation : MOD)

JIS T 8052 *Protective clothing—Mechanical properties—Determination of resistance to cutting by sharp objects*

NOTE : Corresponding International Standard : **ISO 13997:1999** *Protective clothing—Mechanical properties—Determination of resistance to cutting by sharp objects* (MOD)

JIS T 8121-1:2006 *Protective clothing—Gloves and arm guards protecting against cuts and stabs by hand knives—Part 1: Chain-mail gloves and arm guards*

NOTE : Corresponding International Standard : **ISO 13999-1:1999** *Protective clothing—Gloves and arm guards protecting against cuts and stabs by hand knives—Part 1: Chain-mail gloves and arm guards* (IDT)

JIS T 8121-3:2006 *Protective clothing—Gloves and arm guards protecting against cuts and stabs by hand knives—Part 3: Impact cut test for fabric, leather and other materials*

NOTE : Corresponding International Standard : **ISO 13999-3:2002** *Protective clothing—Gloves and arm guards protecting against cuts and stabs by hand knives—Part 3: Impact cut test for fabric, leather and other materials* (MOD)

ISO 7000:2004 *Graphical symbols for use on equipment—Index and synopsis*

3 Terms and definitions

For the purposes of this part of **JIS T 8121**, the terms and definitions given in **JIS T 8121-1** and the following apply.

3.1 protective sleeve

flexible garment covering the arm from the wrist to above the elbow

NOTE 1 Protective sleeves may be self-supporting because of its elasticity or held in place by straps or other systems.

NOTE 2 Protective sleeves are normally worn inside the cuff of a glove and lightly grip the wrist.

4 Requirements

4.1 Dimensions of the protective surface areas of gloves and arm guards and protective sleeves

4.1.1 General

The requirements for fabric, leather, soft plastic or composite gloves and arm guards shall be the same as those for chain-mail gloves and chain-mail or rigid arm guards given in JIS T 8121-1, except as listed below. Sizes and coverage shall be assessed in accordance with 6.8 and Annex A.

4.1.2 Gloves

The coverage provided by gloves shall be continuous and without a slit on the ulnar side of the palm.

4.1.3 Short cuff gloves

Short cuff gloves shall be designed to provide continuous protection from the finger tips to a distance at least 75 mm proximal to the wrist [where A in figure 1 a) is at least 75 mm]. The cuff shall retain this coverage when tested in accordance with Annex A.

4.1.4 Long cuff gloves

Long cuff gloves shall be designed to provide continuous protection from the finger tips to a distance less than 75 mm from the upper arm surface when the elbow is flexed at 90° [where C in figure 1 b) is less than 75 mm], see JIS T 8121-1, Annex B. The cuff shall retain this coverage when tested in accordance with Annex A.

4.1.5 Glove sizes

Gloves shall be marked with their size based on the hand size that they were designed to fit, in accordance with JIS T 8121-1, Annex B, table 1. Sizing shall be verified in accordance with Annex A.

4.1.6 Flexible protective sleeves

Flexible protective sleeves shall provide continuous coverage from the wrist, as defined in JIS T 8121-1, 3.1.2, to above the elbow.

4.1.7 Arm guard, protective sleeve, and arm guard or protective sleeve and glove assemblies

4.1.7.1 General

The coverage provided by arm guards, protective sleeves, and arm guard, or protective sleeve and glove assemblies shall be continuous. The coverage and absence of gaps shall be assessed in accordance with 6.4 and A.5.

4.1.7.2 Coverage by fabric, leather or other flexible arm guards or protective sleeves, and by long arm guards

Flexible arm guards and protective sleeves shall be provided with a means of holding them in place such that the minimum required coverage is maintained when tested in accordance with Annex A. They shall not move more than 40 mm upwards from the wrist when subjected to pulls of 25 N as described in 6.5.

4.1.7.3 Overlap between cuffs and protective sleeves

The overlap of the protection provided by the cuff of a glove and a compatible protective sleeve or arm guard shall be at least 50 mm if there is not a continuous circumferential connection between them. The protective sleeve shall be inside the cuff of the glove. Examination shall be made according to Annex A. The protective sleeve shall resist pulls of 25 N as described in 6.5 and shall not be pulled out of the cuff of the glove.

4.1.7.4 Arm guard and protective sleeve sizes

Arm guards and protective sleeves shall be marked with their minimum length, and where appropriate with the range of stature of persons they are designed to fit and the sizes of compatible gloves (see clause 7 and clause 8). Products are examined in accordance with 6.8 and Annex A.

4.2 Construction

4.2.1 Dimensions of interstices

The maximum dimensions of interstices in rigid parts of the products, or between hard components, or through the structure of a knit, in gloves, arm guards and protective sleeves shall be such that the 4 mm wide gauge number 2 described in JIS T 8121-1, 5.5, is unable to pass through them when applied as described in 6.9.

4.2.2 Attachment of arm guards and protective sleeves

Arm guards or protective sleeves that are attached to gloves shall withstand a pull of 150 N directed up the arm if worn outside the cuff of the glove, or 25 N if worn inside the glove, when tested, as described in 5.2 and 6.5. No gap in coverage shall occur during the test. Gaps shall be assessed as specified in 6.4.

4.2.3 Knife penetration and cut resistance

4.2.3.1 General

Penetration resistance of gloves, arm guards, protective sleeves, and assemblies shall be provided over the whole protective surface, including any junction between a glove and its cuff or attached arm guard or protective sleeve.

4.2.3.2 Fabric, leather, plastic of composite gloves, arm guards and protective sleeves

When tested in accordance with 6.6 and the method given in JIS T 8121-3 with an impact energy of 0.65 J, the mean penetration shall not exceed 8 mm and no single penetration shall exceed 14 mm.

4.2.3.3 Cut resistance

All gloves, arm guards and protective sleeves shall require a cutting force of more than 20 N when the cut resistance is measured in accordance with 6.7 in all of the prescribed orientations.

4.3 Properties of materials

4.3.1 General