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**Protective clothing for users of hand-held
chain-saws — Part 4: Test methods and
performance requirements for protective
gloves**

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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 8125 consists of the following 6 parts under the general title “*Protective clothing for users of hand-held chain-saws*”:

Part 1 : Test rig driven by a flywheel for testing resistance to cutting by a chain-saw

Part 2 : Test methods and performance requirements for leg protectors

Part 3 : Test methods for footwear

Part 4 : Test methods and performance requirements for protective gloves

Part 5 : Test methods and performance requirements for protective gaiters

Part 6 : Test methods and performance requirements for upper body protectors

Protective clothing for users of hand-held chain-saws— Part 4: Test methods and performance requirements for protective gloves

Introduction

This Japanese Industrial Standard has been prepared based on the first edition of ISO 11393-4 published in 2003 with some modifications of the technical contents concerning the variety of usages in Japan and the quality improvement of protective gloves.

The portions with dotted underlines in this Standard are the matters in which the contents of the corresponding International Standard have been modified. A list of modifications with explanations is given in Annex JA.

This Standard forms part of a series concerned with personal protective equipment designed to reduce the risks arising from the use of hand-held chain-saws.

No personal protective equipment can ensure a 100 % protection against cutting from a hand-held chain-saw. Nevertheless, experience has shown that it is possible to design personal protective equipment which offers a certain degree of protection.

These different functional principles include

- a) chain slipping: the chain slips on the surface of protective materials, and it does not cut the human body. This is one of protection effects,
- b) clogging: fibres, threads and other materials are drawn by the chain into the drive sprocket and block chain movement,
- c) chain braking: fibres and other materials have a high resistance to cutting and absorb rotational energy, thereby reducing the chain speed.

Often more than one principle is applied in chain-saw protective clothing. It should be noted however that none has yet been shown to be fully effective in gloves.

The chain-saw use and the selection details of appropriate gloves are described in Annex A.

1 Scope

This Standard specifies the performance requirements and test methods for gloves that are intended to provide protection against cuts by a hand-held chain-saw, including requirements for identification, marking and information for the user.

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

ISO 11393-4 : 2003 *Protective clothing for users of hand-held chain-saws—Part 4: Test methods and performance requirements for protective gloves* (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 1018 *Test methods for knitted fabrics*

NOTE : Corresponding International Standards : ISO 3175-1 *Textiles—Professional care, drycleaning and wetcleaning of fabrics and garments—Part 1: Assessment of performance after cleaning and finishing*, ISO 3175-2 *Textiles—Professional care, drycleaning and wetcleaning of fabrics and garments—Part 2: Procedure for testing performance when cleaning and finishing using tetrachloroethylene*, ISO 5077 *Textiles—Determination of dimensional change in washing and drying*, and ISO 6330 *Textiles—Domestic washing and drying procedures for textile testing* (Overall evaluation : MOD)

JIS L 1096 *Testing methods for woven fabrics*

JIS R 6253 *Waterproof abrasive papers*

JIS T 8051 *Protective clothing — Mechanical properties — Determination of resistance to puncture*

JIS T 8114 *Vibration isolation gloves*

JIS T 8125-1 *Protective clothing for users of hand-held chain-saws—Part 1: Test rig driven by a flywheel for testing resistance to cutting by a chain-saw*

NOTE : Corresponding International Standard : ISO 11393-1 *Protective clothing for users of hand-held chain-saws—Part 1: Test rig driven by a flywheel for testing resistance to cutting by a chain-saw* (MOD)

ISO 4045 *Leather—Chemical tests—Determination of pH*

3 Terms and definitions

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

3.1 chain-saw protective glove

any product which protects a hand against cutting by a hand-held chain-saw

3.2 cuff

that portion of a glove which covers the wrist

3.3 back of the hand

posterior surface of the hand between the wrist and the fingers except the thumb

3.4 five-finger glove

any glove covering both the back and the palm of the hand and wrist, and having separate individual fingers and thumb

3.5 line of longest length of a glove

perpendicular line joining the seam of the cuff (or equivalent position if no seam is present) with the tip of the second finger (or equivalent position in a mitt or one-finger mitt)

3.6 mitt

any glove covering both the back and the palm of the hand and wrist, and having a separate thumb and a common covering for the fingers

3.7 one-finger mitt

any glove covering both the back and palm of the hand and wrist, and having a separate thumb and a separate forefinger and a common covering for the remaining fingers

3.8 protective material

material which is designed to protect the wearer against the cutting effect of a hand-held chain-saw

NOTE : This protective material can include the cloth of the garment.

3.9 protective coverage

that area of the glove which is covered by protective material

3.10 specified protective area

required protective coverage depending on the designs of gloves

3.11 cut through

that the cutting length exceeds 10 mm in the protective material surface that is nearest to the body side under the cutting test of the protective material

NOTE : Suppose that a single-layer or multi-layer material specimen constitutes the finished products such as protective gloves. Apply a working chain-saw to the specimen surface which is farthest from the wearer's body. When a chain-saw continues to cut the specimen layer, being decelerated and finally stops, it means that the cutting of over 10 mm is found on the surface opposite to the surface to which a chain-saw is applied (see JIS T 8125-1).

4 Designs

4.1 Designs of gloves

Design A and Design B have different specified protective areas as defined in 4.2 and 4.3.

4.2 Design A

4.2.1 Description of Design A

Design A is applicable to five-finger gloves without chain-saw protection in the fingers or thumb.

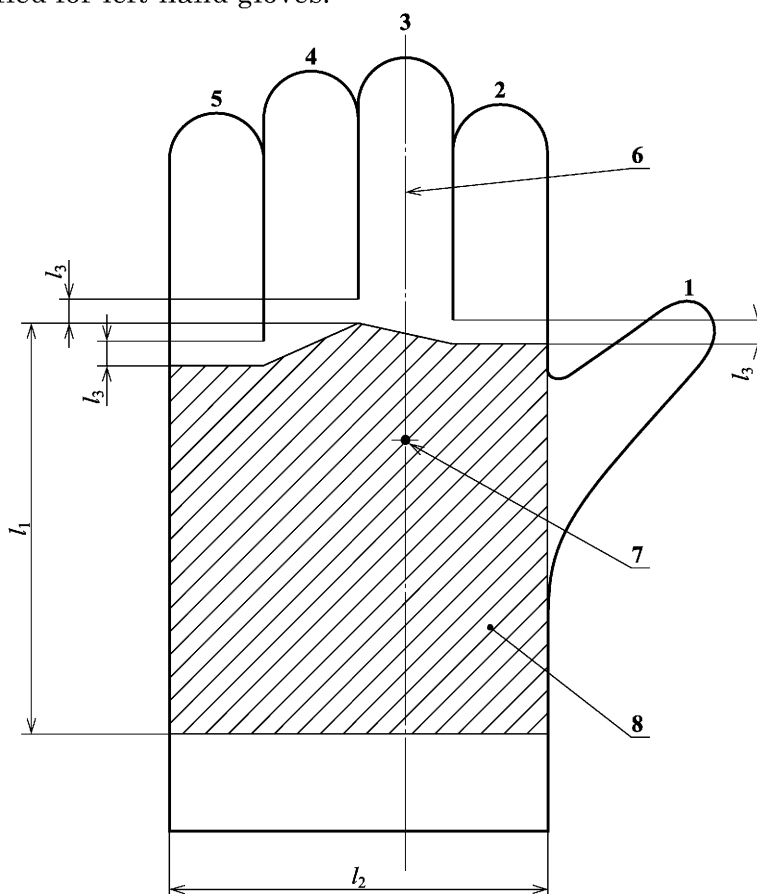
4.2.2 Specified protective area—Left-hand gloves

The specified protective area is shown in figure 1. The Design A protected area shall reach across the entire width of the back of the hand and cover both the first knuckles of digit 2 to digit 5 and the wrist. The protective material covering the third palm length shall be 105 mm or longer.

The dimensions shall be measured on one glove from each pretreatment in accordance with clause 8.

4.2.3 Protective coverage—Right-hand gloves

No protective coverage is required. If protection is offered, however, then it shall at least equal that specified for left-hand gloves.



- 1 to 5 numbers of the digits
- 6 line of longest length
- 7 midpoint of the line of longest length from a finger tip to the cuff seam
- 8 protective area
- l_1 minimum length of protective material measured along the third palm length
- l_2 minimum width of the protective material
- l_3 maximum distance from a crotch to the edge of the protective material (less than 8 mm)

Figure 1 Design A—Specified protective area left-hand glove (back uppermost)

4.3 Design B

4.3.1 Description of Design B

Design B is protective gloves or mitts with specific chain-saw protection as in Design A and on the backs of the fingers, but not on the thumb.

4.3.2 Specified protective area—Left-hand gloves

The specified protective area is shown in figure 2. The Design B protective area shall reach across the entire width of the back of the hand and cover both the backs of the fingertips except the thumb and the wrists. The length of the protective material in the direction of the longest length shall be 160 mm or longer.

The dimensions shall be measured on one glove from each pretreatment in accordance with clause 8.

4.3.3 Protective coverage—Right-hand gloves

No protective coverage is required. If protection is offered, however, then the coverage shall at least equal that specified for left-hand gloves.

4.4 Attachment of protective material

Where the glove is not made entirely of protective material, all the protective materials used shall be sewn or otherwise permanently attached to the remainder of the glove.