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**Hand protection - Guide for the selection, use and
maintenance of protective gloves**

手部防护 防护手套的选择、使用和维护指南

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Hand protection - Guide for the selection, use and maintenance of protective gloves

1 Scope

This Standard specifies the principles, methods and requirements for the selection, use and maintenance of protective gloves.

This Standard applies to protective gloves against physical and chemical factors that injure hands in construction, machinery manufacturing, metal smelting, chemical, electronics and other industries, but does not apply to protective gloves against micro-organisms in medical, food processing industry.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 11651-2008, Code of practice for selection of personal protective equipment

GB/T 17622-2008, Live working-gloves of insulating material

GB/T 22845-2009, Anti-electrostatic glove

GB 24541-2009, Hand protection - Protective gloves against mechanical risks

GB 28881-2012, Hand protection - Protective gloves against chemicals and micro-organisms

AQ 6103-2007, Protective gloves for welders

AQ 6104-2007, X-ray protective gloves

3 Terms and definitions

The following terms and definitions are applicable to this document.

3.1 Protective gloves

4 Hand protection management requirements

4.1 Employers shall formulate relevant management systems of hand protection, so as to protect the hands of workers from injury.

4.2 The hand protection management system shall include the following:

- a) risk identification and risk assessment of the hand.
- b) risk control.
- c) Select appropriate protective gloves as required.
- d) Use and maintain gloves correctly.
- e) Supervise the use of protective gloves and implement the use records of gloves. The contents of the use records include:
 - 1) name of protective gloves (including type and specifications);
 - 2) production/ delivery time;
 - 3) records of inspection and test;
 - 4) the use record of reusable protective gloves, including the date of use, the condition of use and the name of the user;
 - 5) cleaning/ decontamination-related records;
 - 6) date and reason of deprecation.
- f) Provide training and safety education for the operators; the training content shall include:
 - 1) safety production-related laws and regulations;
 - 2) existing harmful factors and risks;
 - 3) the importance and limitations of wearing personal protective equipment;
 - 4) use, inspection and maintenance methods of protective gloves;
 - 5) proper use of protective gloves and precautions;
 - 6) emergency measures for hand accidents.

5.3.3 The risk assessment needs to be reviewed regularly. If the key factors change significantly or the protective measures are insufficient, the risk assessment shall be re-executed. Factors include the update of relevant laws and regulations and the use of new equipment.

6 Selection

6.1 General principles

6.1.1 Products that meet the requirements of relevant national standards shall be selected.

6.1.2 Protective gloves that can provide adequate protection, ergonomics, comfortable wearing, flexible operation shall be selected.

6.1.3 If the hands are harmed by multiple factors at the same time, protective gloves that can protect against the corresponding risks at the same time shall be selected, or multiple layers shall be worn; and the effectiveness of protection and flexibility of use shall be ensured.

6.1.4 The supplier is required to provide a list of materials for making gloves, so as to avoid using gloves that contain substances that cause allergic reactions to users.

6.2 Selection method

According to the results of the risk assessment and the type of operation, determine the protection needs; the selection of suitable protective gloves shall include the following steps:

- a) Determine the type of the required protective gloves (see examples in Appendix A);
- b) Check the product standard requirements;
- c) Determine the performance requirements of the gloves (see Appendix B for the selection method of protective gloves against chemicals);
- d) Select the appropriate material to provide the necessary protection;
- e) Select the appropriate protection scope, and the appropriate size and comfortable gloves (see Appendix C);
- f) Ensure that the selected gloves (e.g. material, structure) will not harm the safety and health of the user;
- g) Determine the selection of reusable or limited-use gloves;

- d) cracks at the sutures;
- e) severe wear;
- f) deformation, scorching, melting or foaming;
- g) stiffness and holes;
- h) sticky or brittle;

7.2.2 For gloves with liquid tightness and airtightness requirements, when there are not obvious pinholes on the surface, use the inflation method to inflate the glove to 1.2 ~ 1.5 times of the original one; immerse it in water; check for air leakage.

7.2.3 The wearer shall clean and inspect the protective gloves after use; if there are situations of 7.2.1, the gloves shall be scrapped.

7.3 Performance test

Protective gloves shall be regularly tested for performance according to the requirements of relevant standards or product specifications. For example, insulating gloves shall be tested for insulation performance every 6 months.

7.4 Cleaning and storage

7.4.1 The protective gloves shall be properly cleaned and maintained according to the requirements of the product manual.

7.4.2 The protective gloves shall be stored in a clean, dry and ventilated place free from oil, heat, direct sunlight, and corrosive gases.

7.5 Scrapping principles

The protective gloves are discarded when one of the following conditions occurs, including:

- a) protective gloves that have the characteristics in 7.2.1 during the visual inspection;
- b) protective gloves which exceed the effective use period or storage period that is specified in the product manual;
- c) protective gloves whose protective performance does not meet the requirements of the current national standards after regular inspections;
- d) other scrapping conditions that are specified in the instruction manual.

Appendix B

(Informative)

Protection against chemicals

B.1 Scope

This Appendix provides a series of instructions to guide the selection and use of protective gloves against chemicals.

B.2 Selection

Pay attention to the following issues when selecting protective gloves against chemicals:

- a) Whether gloves are required to have anti-permeation properties; the risks that are caused by the permeation of gloves may depend on the degree of exposure to chemicals.
- b) If anti-permeation performance is necessary, the protective gloves shall be selected according to the breakthrough time acceptable for continuous exposure to chemicals (permeation test is a continuous exposure to chemicals; the breakthrough time may be extended under intermittent contact conditions).
- c) Are there any chemicals in the operating environment that will cause degradation of the gloves?
- d) In the operating environment, it shall be noted that the mechanical damage of the production may affect the performance of the gloves against chemicals.
- e) Select chemical protective gloves with thermal insulation properties under particularly high or low temperature operating environment.

B.3 Suggestion

B.3.1 Users can refer to the data or instructions to understand the anti-permeation properties of gloves and the anti-permeation properties of different glove materials in chemicals. At the same time, the manufacturer/ supplier shall provide users with recommendations and services related to the selection of protective gloves against chemicals.

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