EN ISO 21420:2020

Protective gloves. General requirements and test methods.

NOTABLE CHANGES FROM EN 420:2003+A1:2009

Previously it was only a European standard, it has now been converted into the international standard ISO 21420:2020. Due to this conversion, some revisions have been made, and therefore new requirements have been added.

Gloves already certified by EN 420:2003+A1:2009 do not have to be certified again until the natural expiration date of their current certificate. New gloves launched into the market will be certified following the new standard EN ISO 21420:2020.

The key requirements listed under the new standard are glove design and construction, chemical innocuousness, comfort and efficiency (sizing and dexterity), electrostatic properties and manufacturing information.

GLOVE DESIGN AND CONSTRUCTION

The updated guidance describes that the protective gloves must not impair performance of the activity, while providing adequate protection from risk.

A new consideration under this standard is the donning and doffing of protective gloves. During these actions, layers of reusable multi-layered gloves must not become separated, and the design of the gloves must minimize the time needed for donning and doffing.

CHEMICAL INNOCUOUSNESS

Chemical innocuousness is considered to ensure that protective gloves do not adversely affect the health or hygiene of the wearer. The materials present in the gloves must not, under foreseeable conditions of normal use, release substances generally known to be toxic, toxic to reproduction, carcinogenic, mutagenic, allergenic, corrosive, sensitizing or irritating.
In addition to the previous pH check for materials containing rubber and plastics, PAHs (polycyclic aromatic hydrocarbons) have now been included as substances to be tested for.

The list of substances now to be checked is:

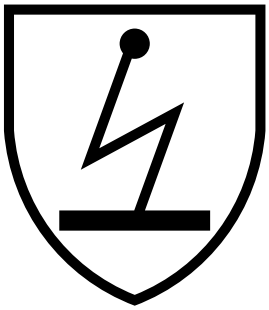
- pH of all materials now including rubber and plastic. Each material shall be tested separately. pH value is to be greater than 3.5 and less than 9.5.
- Chromium VI in leather and each leather type and each colour shall be tested separately, less than 3mg/kg
- Azo colorants which release carcinogenic amines, less than 30mg/kg for each of the carcinogenic aromatic amines listed in the analysis methods
- DMFa (dimethylformamide) in glove containing PU (1 000 mg/kg)
- Nickel in metallic parts in prolonged contact with skin; less than 0.5µg/cm^2/week
- PAH (polycyclic aromatic hydrocarbons) in rubber or plastic materials in direct contact with skin (1 mg/kg) whether the glove is intended for private or professional use

COMFORT AND EFFICIENCY

The new standard outlines the requirements for sizing and dexterity of gloves. Dexterity is defined as 'the manipulative ability to perform a task with the hands'.

Sizing is based on the hand sizes that gloves are intended to fit. The sizes outlined under the new standard cover the range of size 4 to size 13. The criteria assessed to determine sizing compliance include hand circumference and hand length (the distance from the wrist to the tip of the middle finger).

Glove dexterity is determined by multiple factors, including thickness of glove material and elasticity. When assessing glove dexterity, four gloves are tested. Dexterity is graded by the diameter of the smallest steel pin that can be picked up from a flat surface three times in 30 seconds. If no pin can be picked up, the level achieved is zero.



ELECTROSTATIC PROPERTIES

The additional requirements outlined in clause 4.4.1 are relevant for all protective gloves intended to be worn in areas that present explosive or flammable risks. In this instance, if electrostatic properties are claimed, they must be tested in accordance with EN 16530:2014 and the pictogram to the left can be used for marking. Where necessary, EN 1149 parts 1:2006 or 3:2004 should be used to determine further surface electrostatic properties of the gloves. This is relevant to determining further additional requirements of surface electrostatic properties or charge decay.

MANUFACTURING INFORMATION:

The product marking requirements have also changed. Under the new standard, manufacturers are required to add product manufacture traceability data such as the batch number or the date of manufacture or the glove use by date where applicable.

A list of known allergens present within the protective glove is to be supplied upon request.