

How to choose the proper protective glove


Good gloves are user-friendly, flexible, comfortable and have a good fit. They must also protect us from various risks and exposures. Such protective gloves must comply with one or more EN standards.

The glove's properties and protection level

All protective gloves are labelled with a pictogram illustrating which EN standard the glove is classified in accordance with, and which properties and protection level the glove has. Numbers and letters describe the different properties and levels of protection the gloves provide.












The pictogram is usually always printed on the glove or the glove's label.



 <p>EN 388</p> <p>a b c d e f</p>	<p>EN 388 – Mechanical risk The glove protects from mechanical risk and is tested against abrasion, cutting, tears, punctures and impacts.</p>	<p>The letter sequence a b c d e f reflects the glove's protection level:</p> <ul style="list-style-type: none"> a) 1-4 Abrasion resistance b) 1-5 Cut resistance c) 1-4 Tearing strength d) 1-4 Puncture resistance e) A-F Cut resistance (new test 2016) f) Impact - passed (P) / failed (X) <p><i>no letter means that no test was carried out</i></p>
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The glove to the right is classified in accordance with EN388 with protection level 4331B (it is not labelled with the last letter, and has therefore not been tested for impact protection).

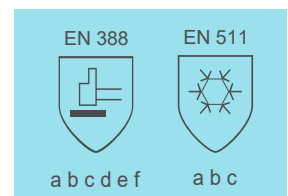
In addition to EN 388, the pictograms below are the most common on protective gloves used at AF Gruppen.

 <p>EN 407</p> <p>a b c d e f</p> <p>EN 407 – Thermal risk The glove protects against heat and fire and has been tested against:</p> <ul style="list-style-type: none"> a) 1-4 Ignition (burning time in sec.) a) 1-4 Ignition (glowing time in sec.) b) 1-4 Contact heat (s) c) 1-4 Convection heat (s) d) 1-4 Radiation heat (s) e) 1-4 Spills from molten metal (number) f) 1-4 Large amounts of molten metal (g) <p><i>Standard EN 12477 must be used for welding.</i></p>	 <p>EN 511</p> <p>a b c</p> <p>EN 511 – Low temperatures The glove protects against low temperatures.</p> <p>The glove is tested against convective cold (cold air) and contact cold (direct contact). The glove may also be tested for water penetration.</p> <ul style="list-style-type: none"> a) 0-4 Transferred cold (insulation) b) 0-4 Contact cold (thermal resistance) c) 0-1 Water penetration (penetration/ no penetration) 	<table border="0"> <tr> <td data-bbox="933 1500 1093 1702">  <p>EN 374-1/Type A</p> <p>AJKLPR</p> </td> <td data-bbox="1093 1500 1252 1702">  <p>EN 374-1/Type B</p> <p>JKL</p> </td> <td data-bbox="1252 1500 1428 1702">  <p>EN 374-1/Type C</p> </td> </tr> </table> <p>EN ISO 374 – Hazardous chemicals Liquid-proof gloves protect against chemicals. The letters below the pictogram represent which chemical the glove provides protection against (see table on next page).</p> <p>Type A: Glove has a breakthrough time of > 30 minutes for at least six chemicals (e.g.: AJKLPR) Type B: Glove has a breakthrough time of > 30 minutes for at least three chemicals (e.g.: JKL) Type C: Glove has a breakthrough time of > 10 minutes for at least one chemical</p> <p>Chemical gloves may also be labelled EN 374-5, and also provide protection from microorganisms (and/or viruses).</p>	 <p>EN 374-1/Type A</p> <p>AJKLPR</p>	 <p>EN 374-1/Type B</p> <p>JKL</p>	 <p>EN 374-1/Type C</p>
 <p>EN 374-1/Type A</p> <p>AJKLPR</p>	 <p>EN 374-1/Type B</p> <p>JKL</p>	 <p>EN 374-1/Type C</p>			

Work operation and environment

At AF Gruppen we regularly perform risk assessments of the work operations that are carried out and the environment they are carried out in. Your supervisor is responsible for implementation, but you are obliged to participate and provide contributions to this.

Often the work operation and the environment represent different risks, and you need gloves with several properties – if so, choose a glove with several pictograms. For example protection from mechanical risk in an environment where you are exposed to cold temperatures.



Risk assessment

Wounds, cuts and puncture injuries

Work with knives, sharp and pointed objects or tools with sharp edges constitute a risk of wounds, cuts and puncture injuries.

AF Gruppen recommends gloves in accordance with **EN 388** with at least index 3 for cut resistance (and category B or C in accordance with new test method). In addition you should choose high puncture resistance if there is a risk of puncture injuries.

Burns

For protection from burn injuries, the glove must at least be in accordance with **EN 407**. When welding, the glove must be labelled with **EN 12 477**.

Frost injuries

Frost injuries can occur when hands are exposed to an air temperature (convective cold) lower than +10°C, or from direct contact with cold surfaces (contact cold).

AF Gruppen recommends gloves in accordance with **EN 511** (low temperatures) for protection against one or both types of cold. In the event of precipitation, protection from water penetration should also be considered.

Exposure to chemicals and/or microorganisms

All chemicals are potentially hazardous. Both exposure time and chemical amount contribute to determining whether damage can occur.

AF Gruppen recommends gloves in accordance with **EN ISO 374** with protection against the relevant chemical for the work operation. The table to the right shows chemicals gloves can protect against.

Code - Chemical		Code - Chemical	
A	Methanol	J	n-Heptane
B	Acetone	K	Sodium hydroxide 40%
C	Acetonitrile	L	Sulphuric acid 96 %
D	Dichloromethane	M	Nitric acid 65%
E	Carbon disulphide	N	Acetic acid 99%
F	Toluene	O	Ammonium hydroxide 25%
G	Diethylamine	P	Hydrogen peroxide 30%
H	Tetrahydrofuran	S	Hydrofluoric acid 40%
I	Ethyl acetate	T	Formaldehyde 37%

All chemicals have their own safety data sheet. Everyone who works with chemicals must be aware of the content of the safety data sheet for the chemical they are using.

Important: Chemical gloves must be discarded within 8 hours after initial exposure to chemicals. Exposed gloves are sorted as environmental waste.

Twisting injuries

Twisting injuries arise as a result of unwanted rotation of hands fingers and wrists.

AF Gruppen recommends gloves in accordance with **EN 388** with low tearing strength in the event of risk of twisting injuries. The glove should tear easily if it becomes jammed in moving machinery parts. The correct size of glove is essential.

Other risk

Also see AF's health card for information on exposure and risk that can impact choice of protective glove.