

Standards for gloves: Standard EN 374: 2003

Gloves Giving Protection from Chemicals and Micro-Organisms

■ Scope

This standard specifies the capability of gloves to protect the user against chemicals and/or micro-organisms.

■ Definitions

Penetration

Penetration is the movement of a chemical and/or micro-organism through porous materials, seams, pinholes or other Imperfections in a protective glove material at a non-molecular level.

Permeation

The rubber and plastic films in gloves do not always act as barriers to liquids. Sometimes they can act as sponges, Soaking up the liquids and holding them against the skin. It is therefore necessary to measure breakthrough times, or the time taken for the hazardous liquid to come in contact with the skin.

■ Requirements

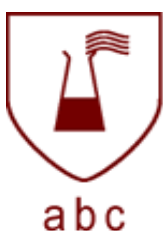
Minimum liquid proof section

The minimum liquid proof section of the glove shall be at least equal to the minimum length of the gloves specified in EN 420.

Penetration

Each chemical tested is classified in terms of breakthrough time (performance level 0 to 6).

Measured breakthrough time	Protection Index	Measured breakthrough time	Protection Index
> 10 minutes	class 1	> 120 minutes	class 4
> 30 minutes	class 2	> 240 minutes	class 5
> 60 minutes	class 3	> 480 minutes	class 6



The ‘Chemical resistant’ glove pictogram must be accompanied by a 3-digit code. This code refers to the code letters of 3 chemicals (from a list of 12 standard defined chemicals), for which a breakthrough time of at least 30 minutes has been obtained.

Code Letter	Chemical	Cas Number	Class
A	Methanol	67-56-1	Primary alcohol
B	Acetone	67-64-1	Ketone
C	Acetonitrile	75-05-8	Nitrile Compound
D	Dichloromethane	75-09-2	Chlorinated paraffin
E	Carbone disulphide	75-15-0	Sulphur containing organic compound
F	Toluene	108-88-3	Aromatic hydrocarbon
G	Diethylamine	109-89-7	Amine
H	Tetrahydrofurane	109-99-9	Heterocyclic and ether compound
I	Ethyl acetate	141-78-6	Ester
J	n-Heptane	142-82-5	Saturated hydrocarbon
K	Sodium hydroxide 40%	1310-73-2	Inorganic base
L	Sulphuric acid 96%	7664-93-9	Inorganic mineral acid

Permeation

A glove shall not leak when tested to an air and/or water leak test, and shall be tested and inspected in compliance with the Acceptable Quality Level.

Performance level	Acceptable quality level unit	Inspection levels
Level 3	< 0.65	G1
Level 2	< 1.5	G1
Level 1	< 4.0	S4



The ‘Low Chemical resistant’ or ‘Waterproof’ glove pictogram is to be used for those gloves that do not achieve a breakthrough time of at least 30 minutes against at least three chemicals from the defined list, but which comply with the Penetration test.



The ‘Micro-organism’ pictogram is to be used when the glove conforms to at least a performance level 2 for the Penetration test.