INSULATING GLOVES for electrical works

Our full range of insulating gloves for live working complies with the specifications of the European standard EN 60903:2003 and the international standard IEC 60903:2002.

Likewise, our production is subjected to a system for ensuring EC quality of production by means of monitoring to implement article 11b of the 89/686/EEC directive relating to Personal Protective Equipment which classifies insulating gloves for live working in category III (mortal risks).

Summary table

Class	Lengths available	Categories	Thickness in mm *	Sizes available	Colour of packaging
00	28/36 cm	AZC	0.5	8-9-10-11	Beige
0	36/41 cm	AZC	1.0	8-9-10-11	Red
1	36/41 cm	AZC	1.5	8-9-10-11	White
2	36/41 cm	RC	2.3	8-9-10-11	Yellow
3	36/41 cm	RC	2.9	8-9-10-11	Green
4	41 cm	RC	3.6	9-10-11	Orange

*Obtaining the category authorises an additional thickness of O.6mm
Signification of category letters :
A : Acid - Z : Ozone - H : Oil - C : Very low temperatures - R : A+Z+H

Electrical requirements (routine test and sampling test in alternating current)

Class	Max operating voltage (volts)	Proof test voltage (volts)	Withstand voltage (volts)
00	500	2 500	5 000
0	1 000	5 000	10 000
1	7 500	10 000	20 000
2	17 000	20 000	30 000
3	26 500	30 000	40 000
4	36 000	40 000	50 000

1. In the choice of class, it is important to define the network nominal voltage which must not exceed the maximum operating voltage. For multiphase networks, the network nominal voltage is the voltage between phases.
2. The test voltage is the one applied to gloves during the individual routine tests.
3. The withstand voltage is the one applied during the validation tests after the gloves have been conditioned for 16 hours in water and after a 3-minutes test at the proof voltage.

Mechanical requirements (sampling test)

- Average tensile strength : ≥ 16 MPa
- Average elongation at break : ≥ 600%
- Puncture resistance : ≥ 18N/mm
- Tension set : ≤ 15 %

Ageing requirements (sampling test)

- Conditioning of the gloves in an air oven at 70 ± 2 °C for 168 hours :
- The elongation at break values must be at least equal to 80% of those of non conditioned gloves.
- The tension set must not exceed 15%.
- The gloves must pass the proof test voltage and withstand test voltage.

Thermal requirements (sampling test)

1. **Resistance to low temperature :**
   conditioning of gloves for 1 hour at -25 ± 3°C. The tests are satisfactory if no tearing, breaking or cracking after folding is visible on the cuff and if the gloves pass the proof test voltage and withstand test voltage.
2. **Flame retardancy test :**
   Application of a flame for 10 seconds at a finger tip.
   The test is satisfactory if, after 55 seconds, the flame has not reached the marker located 55mm away at the other end.

Special properties (sampling test)

1. **Resistance to acid :**
   conditioning of gloves by immersion for 8 hours at 23 ± 2 °C in a sulphuric acid solution at 32° Baume
   • The tensile strength and elongation at break values must be at least equal to 75% of those of non-conditioned gloves.
   • The gloves must pass the proof test voltage and withstand test voltage.
2. **Resistance to oil :**
   conditioning by immersion in oil (Iiquid 102) for 24 hr at 70 ± 2 °C
   • The tensile strength and elongation at break values must be at least equal to 50% of those of non-conditioned gloves.
   • The gloves must pass the proof test voltage and withstand test voltage.
3. **Resistance to ozone :**
   conditioning of gloves in a chamber for 3 hours at 40 ± 2°C and in a 1 mg/m3 ozone concentration
   • The gloves must not present any cracking
   • The gloves must pass the proof test voltage and withstand test voltage.
4. **Resistance to very low temperatures :**
   conditioning of gloves for 24 hours at -40 ± 3°C
   The tests are satisfactory if no tearing, breaking or cracking after folding is visible on the cuff and if the gloves pass the proof test voltage and withstand test voltage.

Packaging

Each pair of gloves is packaged in a different colored opaque sachet depending on its class of protection.

The following information is given on the packaging: class, size, categories, type of cuff, length, test date, manufacture batch number and validation batch number.

Marking