
International Standard



471

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Rubber — Standard temperatures, humidities and times for the conditioning and testing of test pieces

Caoutchouc — Températures, humidités et durées normales pour le conditionnement et l'essai des éprouvettes

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Descriptors : rubber, test specimen, controlled atmospheres, test atmospheres.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 471 was developed by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This second edition was submitted directly to the ISO Council, in accordance with clause 6.11.2 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 471-1977), which had been approved by the member bodies of the following countries :

Australia	Hungary	Spain
Belgium	India	Sweden
Brazil	Italy	Switzerland
Bulgaria	Mexico	Turkey
Canada	Netherlands	United Kingdom
Czechoslovakia	New Zealand	USA
France	Poland	USSR
Germany, F. R.	Romania	Yugoslavia

No member body had expressed disapproval of the document.

Rubber — Standard temperatures, humidities and times for the conditioning and testing of test pieces

1 Scope and field of application

This International Standard specifies the time, temperature and humidity conditions used for the conditioning and testing of all types of rubber test pieces. Special conditions applicable to a particular test or material or simulating a particular climatic environment, are not included.

The conditioning treatment required for each individual test should be stated in the relevant test method.

NOTE — This International Standard takes cognisance of ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*.

2 Definition

For the purpose of this International Standard the following definition applies :

conditioning : Exposure of rubber to a standard temperature and relative humidity for a stipulated period of time immediately before testing, in order to improve the reproducibility of test results.

3 Temperatures and humidities to be used

3.1 Standard temperature

The standard temperature shall be either 23 °C or 27 °C, in accordance with national practice.

NOTE — 23 °C is normally the standard temperature in temperate countries and 27 °C is normally the standard temperature in tropical and subtropical countries.

3.2 Standard humidity

If control of temperature and humidity are necessary, the standard humidity shall be

50 % relative humidity at 23 °C, or

65 % relative humidity at 27 °C.

3.3 Other conditions

3.3.1 For use when standard temperature and humidity are not necessary :

Prevailing ambient temperature and humidity

NOTE — In certain cases, where there is a technical need due to the presence of a textile component, the combination of 20 °C and 65 % relative humidity may be used provided that this condition is clearly stated in the test report. (See ISO 139, *Textiles — Standard atmospheres for conditioning and testing*.)

3.3.2 For use when a subnormal or an elevated temperature is necessary :

Temperature or temperatures selected from the following preferred values :

- a) -80, -70, -55, -40, -25, -10,0 °C
- b) 40, 55, 70, 85, 100, 125 °C
- c) 150, 175, 200, 225, 250, 275, 300 °C

4 Tolerances

4.1 Temperature

For the temperatures specified in 3.1, the normal tolerance shall be ± 2 °C. If a closer tolerance is required for the temperatures specified in 3.1, it shall be ± 1 °C.

The average temperature of the environment shall be as close as practicable to the specified temperature.

4.2 Relative humidity

For the relative humidities specified in 3.2, the normal tolerance shall be ± 5 % relative humidity.

If a closer tolerance is required, it shall be ± 2 % relative humidity.

The average relative humidity of the environment shall be as close as practicable to the specified relative humidity.