INTERNATIONAL STANDARD 471

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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

First edition — 1977-11-15

UDC 678.00 : 620.1 : 551.58 : 697.9

Ref. No. ISO 471-1977 (E)

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

Price based on 2 pages

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (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 set up 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*, and was circulated to the member bodies in September 1975.

It has 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	U.S.A.
France	Poland	U.S.S.R.
Germany	Romania	Yugoslavia

No member body expressed disapproval of the document.

This International Standard cancels and replaces ISO Recommendation R 471-1966, of which it constitutes a technical revision.

Printed in Switzerland

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 The standard temperature and humidity shall be chosen from the following :

a) 23 °C 50 % relative humidity

b) 27 °C 65 % relative humidity

3.2 Other conditions

3.2.1 For use when only control of temperature is necessary :

a) 23 °C
b) 27 °C } *Prevailing ambient humidity*

3.2.2 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.*)

3.2.3 For use when a sub-normal or an elevated temperature is necessary :

Temperature or temperatures selected from the following preferred values :

a) −70, −55, −40, −25, −10,0 °C

b) 40, 55, 70, 85, 100, 125 °C

c) 150, 175, 200, 225, 250 °C

4 TOLERANCES

4.1 Temperature

For the temperatures specified in clause 3, the normal tolerance shall be ± 2 °C. If a closer tolerance is required for the temperatures specified in clause 3, 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 3.1 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.

5 CONDITIONING

5.1 When one of the temperatures and humidities specified in 3.1 is used, the standard time for conditioning shall be a period of not less than 16 h immediately before testing.

5.2 When one of the temperatures specified in 3.2.1 is used, the standard time for conditioning shall be a period of not less than 3 h immediately before testing.

5.3 When one of the temperatures specified in 3.2.3 is used, the test pieces shall be maintained at that temperature immediately before testing for a period of time sufficient to reach temperature equilibrium with the environment, or for the period of time required by the specification covering the material or product being tested.