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Replacing GB 6529-1986

Textiles - Standard atmospheres for conditioning and testing

纺织品 调湿和试验用标准大气

(ISO 139:2005, MOD)

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Foreword

This Standard modifies and adopts ISO 139:2005, Textiles - Standard atmospheres for conditioning and testing (English version).

This Standard is redrafted according to ISO 139:2005; the differences from ISO 139:2005 are:

1. Put the main content of the ISO introduction into Appendix B in the form of notes.
2. In accordance with the draft amendment of ISO 139:2005 DAmD 1.2, add the term 2.8 "rapid conditioning" to Chapter 2; add the stipulation for 3.2.2 "tropical standard atmosphere" in 3.2; adjust the numbers of this chapter.
3. Replace the international standards which are cited in ISO 139:2005 with corresponding national standards.
4. Add informative Appendix C to guide the use.

This Standard replaces GB 6529-1986, Standard atmospheres for textiles conditioning and testing. This Standard makes the following major changes to GB 6529-1986:

1. Change it from a mandatory standard to a recommended standard.
2. Delete 3 definitions in Chapter 2; add 6 definitions that are related to the content of the new standard.
3. Adjust the chapters of the standard; modify the technical contents; add contents to Chapter 3 "Requirements" and Chapter 4 "Instrument".
4. Modify the two originally specified atmospheric conditions of "temperate zone standard atmosphere" (temperature of 20 °C, relative humidity of 65%) and "tropical standard atmosphere" (temperature of 27 °C, relative humidity of 65%) to: "standard atmosphere" (temperature of 20 °C, relative humidity of 65.0%) and "optional standard atmosphere" (temperature of 23 °C, relative humidity of 50.0%; or temperature of 27 °C, relative humidity of 65.0%).
5. Modify the tolerance zone of relative humidity; modify the tolerance zone of relative humidity under all atmospheric conditions to $\pm 4.0\%$.
6. Delete Appendix A and Appendix C of GB 6529-1986.
7. Simply the original Appendix B, to be Appendix C of this Standard.

Textiles - Standard atmospheres for conditioning and testing

1 Scope

This Standard specifies the characteristics and use of the standard atmosphere for textiles during the conditioning and determination of physical-mechanical properties, as well as the characteristics and use of the optional standard atmosphere when the relevant parties agree.

2 Terms and definitions

The following terms and definitions are applicable to this Standard.

2.1 Standard atmosphere

An environment where relative humidity and temperature are controlled; textiles are subjected to conditioning and testing under this environmental temperature and humidity.

2.2 Relative humidity

Under the same temperature and pressure conditions, the ratio of the actual pressure of water vapor in the atmosphere to the pressure of saturated water vapor, which is expressed in percentages.

2.3 Tolerance

The difference between the upper tolerance limit value and the lower tolerance limit value.

2.4 Tolerance zone

The variation value whose characteristic is between the tolerance limits, including the tolerance limits.

2.5 Tolerance limits

The specified value of the upper limit and/or lower limit of the given allowable value.

2.6 Uncertainty of measurement

The measuring device shall meet the following requirements:

- Resolution: temperature ≤ 0.1 °C, relative humidity $\leq 0.1\%$.
- Uncertainty of measurement: the temperature does not exceed ± 0.5 °C; the relative humidity does not exceed $\pm 2.0\%$.

4.2 Environmental requirements of the measuring device

In the conditioned atmosphere, the devices that are used to determine relative humidity and temperature shall be separated from the devices which are usually used for controlled heating, conditioning and air conditioning pipes.

5 Procedure

5.1 Determine the reading frequency of continuous monitoring

The determination of the monitoring frequency of the reading sensor that controls the atmosphere shall ensure that any situation that exceeds the tolerance limits within a short period of time can be monitored (see Appendix A for additional instructions).

5.2 Monitor the atmosphere at different locations

In order to ensure sufficient atmospheric conditions to monitor the entire enclosed environment, multiple measurement devices shall be installed (see Appendix A).

5.3 Preconditioning

Textiles shall be preconditioned before the conditioning. If necessary, textiles shall be placed under the atmospheric condition where the relative humidity is 10.0% ~ 25.0%, and the temperature is not more than 50.0 °C, to make them close to equilibrium.

5.4 Conditioning

Before the test, the textiles shall be placed in a standard atmospheric environment for conditioning. During the conditioning period, air shall be able to flow through the textile smoothly. Place the textile in the atmospheric environment for the required time, until equilibrium.

Unless otherwise specified, when the weight progressive variable of textiles does not exceed 0.25%, it is regarded to be in the equilibrium state. When the conditioning is performed in a laboratory of standard atmospheric environment, the continuous weighing interval of textiles is 2 h; when rapid conditioning is used, the continuous weighing interval of textiles is 2 min ~ 10 min.

Appendix A

(Normative)

Control of standard atmosphere

A.1 General

The constant temperature and humidity laboratory shall be able to provide and maintain the standard atmosphere that is specified in 3.1 and 3.2; its tolerance zone shall be in accordance with the provisions of 3.3.

When the following conditions are met, it's considered that the temperature and relative humidity have reached the specified conditions:

- a) Temperature and relative humidity meet the tolerance zone of standard atmospheric conditions for at least 1 hour continuously;
- b) The change of standard atmosphere at different locations shall meet the specified tolerance zone.

A.2 Apparatus

The apparatus shall meet the requirements of 4.1; it shall have a sensor for continuous monitoring, and an appropriate device that is capable of outputting records.

A.3 Procedure

A.3.1 Monitor the atmosphere at different locations

It shall periodically monitor the changes in atmospheric conditions at different points in the laboratory; there shall be no less than one monitoring point within 50 m³.

If the atmospheric changes at different locations do not meet the tolerance, the air flow in the laboratory shall be checked.

A.3.2 Placement of continuous monitoring device

Changes in temperature and relative humidity may exist in the entire work area; the selected monitoring location shall be close to the main work area. After the monitoring location is determined, appropriate monitoring points can be determined.

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