



Designation: D1610 – 18 (Reapproved 2023)

Standard Practice for Conditioning Leather and Leather Products for Testing¹

This standard is issued under the fixed designation D1610; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This practice covers the conditioning of all units and specimens of leather and leather products prior to testing and the conditions under which they should be tested. This practice does not apply to wet blue.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*

D1517 Terminology Relating to Leather

E337 Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures)

2.2 *IU Standards:*

IUP/3 Conditioning²

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions of leather terms used in this practice, refer to Terminology **D1517**.

3.1.2 *standard atmospheric conditions*—for leather and leather testing, one of two sets of conditions:

(1) a temperature of $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ ($73.4\text{ }^{\circ}\text{F} \pm 3.6\text{ }^{\circ}\text{F}$) and a relative humidity of $50\% \pm 4\%$.

(2) a temperature of $20\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ ($68.0\text{ }^{\circ}\text{F} \pm 3.6\text{ }^{\circ}\text{F}$) and a relative humidity of $65\% \pm 4\%$.

Condition set (1) is used as the standard for leather testing in North America and condition set (2) is used as the standard for leather testing in Europe and Japan.

4. Summary of Test Method

4.1 The conditioning prescribed in this practice is designed to obtain reproducible test results on leather and leather products by the standardization of the relative humidity and temperature conditions to which the leather or leather product is subjected prior to and during testing.

5. Significance and Use

5.1 Temperature and relative humidity have an influence on many of the physical properties of leather. Depending on environmental conditions the moisture content in leather may vary significantly. Standardized conditioning in part allows for reliable comparisons to be made among different leather and leather products, and among different laboratories.

6. Apparatus

6.1 *Room*, in which the standard atmosphere is automatically maintained.

6.2 *Psychrometer*—Either a sling psychrometer, or a stationary type psychrometer having the air circulated over the thermometer bulbs.

NOTE 1—It is preferable to draw air over the thermometer bulb rather than blow air, from a fan source, over them. Heat from the fan may cause errors in the readings.

6.3 *Thermometers*—The thermometers should conform approximately to the following requirements: range $0\text{ }^{\circ}\text{C}$ to $52\text{ }^{\circ}\text{C}$ ($32\text{ }^{\circ}\text{F}$ to $122\text{ }^{\circ}\text{F}$); graduation $0.2\text{ }^{\circ}\text{C}$ ($0.5\text{ }^{\circ}\text{F}$). They should be matched to within $0.1\text{ }^{\circ}\text{C}$ ($0.25\text{ }^{\circ}\text{F}$) throughout the range used. Calibrate thermometer in accordance with manufacturer's instructions.

NOTE 2—Under ordinary conditions, an error of 1 % in relative humidity corresponds to an error of approximately $0.1\text{ }^{\circ}\text{C}$ ($0.2\text{ }^{\circ}\text{F}$) in the wet-bulb depression.

6.4 *Chamber for maintaining 65 % relative humidity*—A relative humidity of $65\% \pm 2\%$ at $20\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ can be

¹ This practice is under the jurisdiction of ASTM Committee **D31** on Leather and is the direct responsibility of Subcommittee **D31.07** on Physical Properties. This practice was developed in cooperation with the American Leather Chemists Assn.

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² *Journal of the Society of Leather Trades' Chemists*, Vol XLII, No. 12, pp 386–387.