

Translated English of Chinese Standard: QB/T2710-2018

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LIGHT INDUSTRY STANDARD OF
THE PEOPLE'S REPUBLIC OF CHINA

ICS 59.140.30

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QB/T 2710-2018

Replacing QB/T 2710-2005

**Leather - Physical and mechanical tests - Determination
of tensile strength and percentage extension**

皮革 物理和机械试验 抗张强度和伸长率的测定

(ISO 3376:2011, Leather - Physical and mechanical tests - Determination of
tensile strength and percentage extension, MOD)

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Table of Contents

Foreword	3
1 Scope	5
2 Normative references	5
3 Principle.....	5
4 Device	5
5 Sampling and specimen preparation	6
6 Procedure	7
7 Representation of results	8
8 Test report.....	10

- ADJUST the calculation method and the calculation result requirements in the original international standard “8 Test report” to “7 Representation of results”, for easy understanding and use;
- Properly ADJUST the test report, to meet the custom of our country.

This standard has also undergone the following editorial changes:

- DELETE the foreword to the ISO standard;
- CHANGE "this international standard" to "this standard";
- USE the decimal point “.” to replace the comma “,” which was used as a decimal point “.”;
- USE the multiplication sign “X” to replace “.” which is used as a multiplication sign.

This standard was proposed by the China National Light Industry Council.

This standard shall be under the jurisdiction of the National Leather Industry Standardization Technical Committee (SAC/TC 252).

Drafting organizations of this standard: National Leather Quality Supervision and Inspection Center (Zhejiang), China Leather Shoe Research Institute Co., Ltd., China Leather Association, Shandong Leather Industry Association, China Leather and Footwear Industry Research Institute (Jinjiang) Co., Ltd., Hangzhou Municipal Quality and Technical Supervision and Inspection Institute, National Leather Products Quality Inspection Center (Guangdong), Zhejiang Grammy Clothing Co., Ltd.

The main drafters of this standard: Lin Lei, Shi Yiwei, Bu Qiaoqiao, Zhang Yahong, Huang Yanjie, Li Xuewu, Dai Hongxiang, Xu Ye, Zhao Liguang, Yang Fengbo, Yao Liping.

This standard shall, from the date of implementation, replace the original light industry standard QB/T 2710-2005 "Leather - Physical and mechanical tests - Determination of tensile strength and percentage extension". The original light industry standard QB/T 2710-2005 "Leather - Physical and mechanical tests - Determination of tensile strength and percentage extension" was abolished.

This standard replaces the standard previously issued as follows:

- GB 4689.5-1984 (later converted to QB/T 3812.5-1999, content unchanged);
- QB/T 3812.5-1999;
- QB/T 2710-2005.

According to the provisions of QB/T 2707, use a die knife (4.4) to cut 6 specimens from the grain size, wherein the long sides of 3 specimens are parallel to the ridge line (longitudinal specimen) and the long sides of the rest 3 specimens are perpendicular to the ridge line (Horizontal specimen). If the previous test shows that there is slippage between the specimen and the fixture, then use a large die knife (4.4) to cut a new specimen.

5.3 Air conditioning of specimen

It is carried out according to the provisions of QB/T 2707.

6 Procedure

6.1 Determination of dimensions

6.1.1 Select three positions on the grain surface and meat surface of each specimen; use a Vernier caliper (4.5) to measure the width of the specimen (accurate to 0.1 mm). Take a middle point E (see Figure 1) for the measurement of 3 positions in each group; the other two points are in the middle of the two lines of point E and AB and CD. Take the arithmetic mean of the 6 measured values as the width w of each specimen.

Note: For soft leather, the width of the die knife can be used as the width of the specimen.

6.1.2 Measure the thickness of each specimen according to the provisions of QB/T 2709. Measure 3 points, namely the middle point E, as well as the other two points which are located in the middle of the two lines between point E and AB and CD. Take the arithmetic mean of the three measured values as the thickness of each specimen.

6.2 Determination of tensile strength

6.2.1 Adjust the distance between the upper and lower fixtures of the tensile testing machine (4.1) to (50 ± 1) (standard specimen) or (100 ± 2) (large specimen). Use the fixtures to hold the specimen, to allow the edge of the fixture to be flush with the AB and CD lines; meanwhile ensure that the grain surface of the specimen is on the same plane. The long axis direction of the specimen shall be parallel to the traction direction.

6.2.2 Start the tensile testing machine until the specimen breaks, and record the maximum force value at break as the breaking force F .

6.3 Determination of percentage extension at specified load

6.3.1 Clamp the specimen according to 6.2.1. Measure the distance between

The calculation results are expressed as the arithmetic mean of the tensile strength of the three transverse specimens and the arithmetic mean of the tensile strength of the three longitudinal specimens, accurate to 0.1 MPa.

Note: The conversion relationship between MPa and N/mm² is: 1 N/mm² = 1 MPa.

7.2 Percentage extension at specified load

Calculate the percentage extension of the specimen at specified load according to formula (2):

$$E_1 = \frac{L_1 - L_0}{L_0} \times 100 \dots\dots\dots (2)$$

Where:

E_1 - Percentage extension at specified load, %;

L_1 - The distance of the fixture or sensor under the specified load, the unit is millimeter (mm);

L_0 - The initial distance of the fixture or sensor, in millimeters (mm).

The calculation results are expressed as the arithmetic mean of the percentage extension at load of the three transverse specimens and the arithmetic mean of the percentage extension at load of the three longitudinal specimens, accurate to 1%.

7.3 Percentage extension at break

Calculate the percentage extension at break of the sample according to formula (3):

$$E_b = \frac{L_2 - L_0}{L_0} \times 100 \dots\dots\dots (3)$$

Where:

E_b - Percentage extension at break, %;

L_2 - The distance of the fixture or sensor when the specimen is broken, in millimeter (mm);

L_0 - The initial distance of the fixture or sensor, in millimeters (mm).

The calculation results are expressed as the arithmetic mean of the percentage extension at break of the three transverse specimens and the arithmetic mean

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Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

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