

ICS 59.140.10

CCS Y46



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 17928-2023

**Leather - Physical and mechanical tests - Measurement of
stitch tear resistance**

皮革 物理和机械试验 针孔撕裂强度的测定

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Table of Contents

Foreword...	3
1 Scope...	6
2 Normative References...	6
3 Terms and Definitions...	6
4 Principle...	7
5 Apparatus...	7
6 Sampling and Preparation of Specimens...	9
7 Test Procedures...	10
8 Expression of the Results...	10
9 Test Report...	11

Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part

1.Rules for the Structure and Drafting of Standardizing Documents. This Document replaced GB/T 17928-1999 Leather - Determination of the Stitch Tear Resistance. Compared with GB/T 17928-1999, the major technical changes of this Document are as follows besides the structural adjustments and editorial modifications.

--- Change the scope of application of the standard (see Clause 1 of this Edition; Clause 1 of the 1999 Edition);

--- Add two Clauses of "Terms and Definitions" and "Principles" (see Clauses 3 and 4 of this Edition);

--- Change the instruments and equipment; and detail the requirements for tensile machines, die cutters, etc. (see Clause 5 of this Edition; Clause 3 of the 1999 Edition);

--- Change the specimen size (see Figure 3 of this Edition; Figure 3 of the 1999 Edition);

--- Change the test conditions (see

6.3 of this Edition; Clause 4 of the 1999 Edition);

--- Change the measuring point of the specimen thickness (see

7.1 of this Edition;

6.1 of the 1999 Edition);

--- Change the fixing method of the specimen; and delete the requirement for the length of the lower end of the specimen (see 7.3,

7.4 of this Edition; 6.2,

6.3 of the 1999 Edition);

1 Scope

GB/T 17928-2023 measures how well leather holds a stitch. Almost every leather article fails at a seam rather than in the middle of a panel: the needle makes a hole, the thread concentrates load on that hole, and the leather either holds or tears from perforation to perforation. Shoe uppers, bag handles, upholstery seams and safety equipment all depend on this, and it is a property that tensile strength does not predict - a leather can be strong in bulk and still tear readily at a line of needle holes, depending on its fibre structure and how it was tanned and finished. This document describes the test method for the stitch tear resistance of leather, specifying the specimen, the way the load is applied through the perforations and how the result is expressed. It applies to the determination of stitch tear resistance for various types of leather, and is particularly relevant for leather above a given thickness, where the property is most often specified. Under ICS 59.140.10 and CCS Y46, it is written for tanneries, for the footwear, leathergoods and furniture manufacturers who set incoming specifications, and for the testing laboratories that verify them.

This Document describes the test method for the stitch tear resistance of leather. This Document is applicable to the determination of the stitch tear resistance of various types of leather, especially for leather with a thickness greater than

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB/T 16825.1 Metallic materials - Calibration and verification of static uniaxial testing machines - Part

1.Tension/compression testing machines - Calibration and verification of the force-measuring system (GB/T 16825.1-2022, ISO 7500-1.2018, IDT)

GB/T 39364 Leather - Chemical, physical, mechanical and fastness tests - Sampling location (GB/T 39364-2020,

ISO 2418.2017, MOD) QB/T 2262 Terms of leather industry QB/T 2707 Leather - Physical and mechanical tests - Sample preparation and conditioning (QB/T 2707-2018,

ISO 2419.2012, MOD) QB/T 2709 Leather - Physical and mechanical tests - Determination of thickness (QB/T 2709-2005, ISO 2589.2002, MOD)

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in QB/T 2262 apply. the grain surface with a die cutter (5.5), of which 3 specimens have their long sides parallel to the spine (longitudinal specimens) and the other 3 specimens have their long sides perpendicular to the spine (transverse specimens). If the spine cannot be identified, samples are taken in two mutually perpendicular directions. The preparation of the specimen shall be carried out with a die cutter (5.5), and no knife or other similar tools shall be used for subsequent cutting. If there are more than 2 samples in the same batch of products that need to be tested, at least 1 specimen can be cut from each sample in each direction, and the total number of specimens in each direction shall be no less than 3.

6.3 Sample conditioning It shall be performed according to the provisions of QB/T 2707. If the specimen is not prepared under standard atmosphere or the specimen is not tested immediately after cutting, the specimen shall be placed in standard atmosphere again for conditioning.

7 Test Procedures

7.1 Measure the thickness of the specimen at the specified point according to the provisions of QB/T 2709. The measuring point should be about 10mm away from the lower end of the specimen notch (see Figure 3).

7.2 Fix the upper end of the metal specimen clamp (5.2) in the upper fixture of the tensile machine.

7.3 Place the notch of the specimen between the two arms of the specimen clamp; and pass the metal needle plate through the test hole of the specimen clamp and the notch of the specimen.

7.4 Fix the other end of the specimen in the lower fixture of the tensile machine.

7.5 Start the tensile machine for the test and record the maximum force when the specimen is torn, measured in N.