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**Test method for closed-end burst of zirconium tubes
at room temperature**

锆管室温闭端爆破试验方法

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Table of Contents

Foreword.....	3
1 Scope.....	4
2 Normative references.....	4
3 Terms and definitions	4
4 Principle	5
5 Instruments and apparatuses.....	5
6 Sample.....	6
7 Test procedure	7
8 Test report.....	9

Test method for closed-end burst of zirconium tubes at room temperature

1 Scope

This Standard specifies the test method for closed-end internal pressure burst of zirconium tubes at room temperature of 10 °C ~ 35 °C.

This Standard applies to the closed-end internal pressure burst test of zirconium tubes at room temperature of 10 °C ~ 35 °C, and is used for the determination of bursting strength and percent total circumferential elongation at the crevasse of zirconium tubes at room temperature.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 8170, Rules of rounding off for numerical values & expression and judgment of limiting values

3 Terms and definitions

The following terms and definitions are applicable to this document.

3.1 Maximum fluid pressure

p

The maximum pressure value of the fluid acting on the end of the sample, during the entire loading process of the test.

3.2 Bursting strength

s

The maximum stress value that is measured when the sample suddenly bursts, when the tube sample is subject to a burst test and a pressure is continuously applied through a liquid or other medium.

5.2.3 The pumping system shall be rigid, and its energy storage shall be as low as possible according to the actual situation. There shall be no pressure fluctuations in each stroke of the pump.

5.3 Valve

The various valves in the testing machine shall have the functions of controlling and adjusting the pressure, and shall be able to ensure the safety of the test.

5.4 Pressure transmitter

5.4.1 The pressure transmitter shall have sufficient capacity to monitor the pressure of the system, and to ensure that the test software records the maximum fluid pressure reached during the test.

5.4.2 The measurement accuracy of the pressure transmitter shall be level-0.5 or better; the verification period shall not exceed 12 months.

5.4.3 The data collection location of the pressure transmitter shall be as close as possible to the sample.

5.5 Dimension measuring tools

5.5.1 Use an outside micrometer or other measuring tools of equivalent accuracy for the outer diameter measurement; the accuracy of the measuring tool shall not be less than 0.005 mm.

5.5.2 Use a micrometer for measuring pipe wall thicknesses or other measuring tools of equivalent accuracy for the wall thickness measurement; the accuracy of the measuring tool shall not be less than 0.005 mm.

5.5.3 Use a vernier caliper or other measuring tools of equivalent accuracy to measure the circumference after breaking; the accuracy of the measuring tool shall not be less than 0.05 mm.

6 Sample

6.1 General requirements

6.1.1 The sample cutting location and quantity shall be implemented in accordance with the relevant product technical requirements. The cut can be chamfered and deburred, but there shall be no deformation.

6.1.2 The sample cutting length shall be able to ensure that the unsupported length is not less than 10 times the nominal outer diameter of the sample.

6.2 Sample preparation

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