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

GB/T 24272-2009

**Test method for mechanical torque rate of spiral coils of
thermostat metal**

热双金属平螺旋形元件机械转矩率试验方法
(English Translation)

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Foreword

This revised standard adopts ASTM B362:1991 (2003 years' re-confirm) "hot flat spiral bimetal element mechanical torque ratio test method".

This standard is based on ASTM B362:1991 (2003 years' re-confirm) redrafted. For ease of comparison, in the informative Appendix A the list of standard and control adopted list of standard terms.

Taking into account China's national conditions, when using ASTM standard has been modified.

This standard ASTM B362:1991 standard main technical differences are.

--- Test torque and initial torque data modified;

--- Is coordinated with the relevant standard, temperatures T1, T2 when the angle indicated by the symbols A1, A2 to 1, 2.

The Standard Appendix A, Appendix B is an informative annex.

The standard proposed by China Electrical Equipment Industrial Association.

This standard by the National Standardization Technical Committee for Electrotechnical alloy (SAC/TC228) centralized.

This standard was drafted. Baoshan Iron & Steel Co., Ltd., Shanghai Electric Division electrician Material Co., Ltd., Shanghai Electric Co., Ltd. and transport, Guilin Institute of Electrical Science, Foshan Electrical Precision Alloy Co., Ltd.

1 Scope

This standard specifies the principle of thermal bimetal flat spiral element mechanical torque measurement, methods and equipment requirements.

This standard applies to the determination of the thermal mechanical torque rate bi-metal flat spiral element. It is also applicable to other materials to accurately determine the level spiral Mechanical torque rate element. It can be used to determine the mechanical force hot flat spiral bimetal element.

This standard may be at a given moment of machinery, to determine the optimal thickness and length of the material.

This standard can be used to test the quality of the thermal bimetal to determine acceptance or rejection.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB 2900.4 Electrical Electrical Alloy term GB 4461 thermal bimetal strip

3 Terms, definitions and code

GB/T 2900.4 and established the following terms and definitions apply to this standard.

Thermal bimetal narrow along its longitudinal direction so that the side of the holding member in a plane perpendicular to the axis of the helical coil made.

The ratio of the torque deflection angle. Used to measure the thermal rigid flat spiral bimetal element. Codenamed M.

4 Measuring principle

Applying a torque to the hot flat spiral bimetal element, whereby the angle measurement caused by the deflection. The applied torque can not exceed the level screw Elastic limit Spiral element.

Flat spiral heat bimetal element mechanical torque rate formula (1).

$$M = PL^2-1$$

Where.

--- Mechanical torque rate the M units of (N · m/1 °);

P --- test load, in units of (N);

--- L of arm units of (m);

Angular position 1 --- under the initial moment, the unit is (°);

2 --- torque applied to the angular position of the test after the units (°).

5 Measurement device

Measurement apparatus shown in FIG. 1 comprises the main content from 5.1 to 5.6.