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

GB/T 39082-2020

**Test method of vickers hardness testing for resistance spot,
projection and seam welds**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to modify and adopt ISO 14271.2017 "Vickers Hardness of Resistance Spot Welding, Projection Welding and Seam Welding Joints

Degree test (small force value and microhardness)".

Compared with ISO 14271.2017, this standard has many structural adjustments. Appendix A lists this standard and ISO 14271.2017.

A list of changes in the chapter number

Compared with ISO 14271.2017, there are technical differences between this standard and the clauses related to these differences have been passed in the outer margins.

The set vertical single line (|) is marked, and Appendix B gives a list of the corresponding technical differences and their reasons.

This standard has made the following editorial changes.

---Modified the standard name;

---References are deleted.

This standard was proposed and managed by the National Welding Standardization Technical Committee (SAC/TC55).

Drafting organizations of this standard. Chongqing University of Science and Technology, Harbin Welding Research Institute Co., Ltd., Anhui Zhongke Duling Commercial Electric Co., Ltd.

Company, Geely Automobile Research Institute (Ningbo) Co., Ltd., Beijing Aerospace Xinfeng Machinery Equipment Co., Ltd., and Shanghai Materials Research Institute.

1 Scope

This standard specifies the instruments, specimens, test procedures and test reports for the Vickers hardness test of resistance spot welding, projection welding and seam welding joints.

This standard is applicable to the determination of small force value or micro Vickers hardness of resistance welded joints of metal plates with a thickness of 0.5mm~6.0mm.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 3375 welding terminology

GB/T 4340.1 Vickers hardness test of metallic materials Part 1.Test method (GB/T 4340.1-2009, ISO 6507-1.

2005, MOD)

GB/T 4340.2 Vickers hardness test of metallic materials Part 2.Inspection and calibration of hardness testers (GB/T 4340.2-2012,

ISO 6507-2.2005, MOD)

GB/T 4340.3 Vickers hardness test of metallic materials Part 3.Calibration of standard hardness blocks (GB/T 4340.3-2012,

ISO 6507-3.2005, MOD)

GB/T 4340.4 Vickers hardness test of metallic materials Part 4.Hardness value table (GB/T 4340.4-2009, ISO 6507-4.

2005, IDT)

3 Terms and definitions

The following terms and definitions defined in GB/T 3375 apply to this document.

3.1

Low-forcehardnesstest

Vickers hardness test with a test force of $1.961\text{N} \leq F \leq 9.807\text{N}$.

3.2

Microhardness test

Vickers hardness test with test force $F < 1.961\text{N}$.

Note. There is no clear correlation between the results of the small force Vickers hardness test and the micro Vickers hardness test.

3.3

Vickershardnessvalue

HV

Expressed by the quotient of the test force divided by the permanent hardness indentation surface area.

4 Equipment

The hardness tester should be inspected and calibrated according to GB/T 4340.2, and the standard hardness block should be calibrated according to GB/T 4340.3.