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

GB/T 35085-2018

**Destructive tests on welds in metallic materials -- Vickers and
Knoop Hardness testing of joints welded by laser and electron
beam**

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100 - 0.043 0.061 0.096 0.136 0.193 0.304 0.431

150 - 0.035 0.050 0.079 0.111 0.157 0.249 0.352

200 - 0.030 0.043 0.068 0.096 0.136 0.215 0.304

250 - 0.027 0.039 0.061 0.086 0.122 0.193 0.272

300 - 0.025 0.035 0.056 0.079 0.111 0.176 0.249

350 - 0.023 0.033 0.051 0.073 0.103 0.163 0.230

400 - 0.022 0.030 0.048 0.068 0.096 0.152 0.215

450 - 0.020 0.029 0.045 0.064 0.091 0.144 0.203

500 - - 0.027 0.043 0.061 0.086 0.136 0.193

550 - - 0.028 0.041 0.058 0.082 0.130 0.184

600 - - 0.025 0.039 0.056 0.079 0.124 0.176

650 - - 0.024 0.038 0.053 0.076 0.119 0.169

700 - - 0.023 0.036 0.051 0.073 0.115 0.163

750 - - 0.022 0.035 0.050 0.070 0.111 0.157

800 - - 0.022 0.034 0.048 0.068 0.108 0.152

850 - - 0.021 0.033 0.047 0.066 0.104 0.148

400 - 0.027 0.042 0.060 0.084 0.103 0.133 0.189

450 - 0.025 0.040 0.056 0.079 0.097 0.126 0.178

500 - 0.024 0.038 0.053 0.075 0.092 0.119 0.169
550 - 0.023 0.036 0.051 0.072 0.088 0.114 0.161
600 - 0.022 0.034 0.049 0.069 0.084 0.109 0.154
650 - 0.021 0.033 0.047 0.066 0.081 0.105 0.148
700 - 0.020 0.032 0.045 0.064 0.078 0.101 0.143
750 - - 0.031 0.043 0.062 0.075 0.097 0.138
800 - - 0.030 0.042 0.060 0.073 0.094 0.133
850 - - 0.029 0.041 0.058 0.071 0.091 0.129
1 welded metal, top
2 welded metal, bottom
3 heat affected zone, welded top
4 heat affected zone, welded bottom
5 heat affected zone, welded top
6 heat affected zone, welded bottom
7 base metal
8 base metal

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 the use of ISO 22826.2005 "destructive testing of metallic materials laser and electron beam welding

Head Vickers and Knoop hardness test.

The technical differences between this standard and ISO 22826.2005 and their reasons are as follows.

---About the normative reference documents, this standard has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory References", and the specific adjustments are as follows.

* Replace ISO 6507 (all parts) with GB/T 4340 (all parts), the degree of consistency between the two parts

as follows.

GB/T 4340.1-2009 Vickers hardness test for metallic materials - Part 1. Test methods (ISO 6507-1.

2005, MOD);

GB/T 4340.2-2012 Vickers hardness test for metallic materials - Part 2. Examination and calibration of durometer

(ISO 6507-2:2005, MOD);

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

(ISO 6507-3:2005, MOD).

* The original ISO 4545, ISO 4546, ISO 4547, ISO 10250 have been ISO 4545-1, ISO 4545-2,

Replaced by ISO 4545-3 and ISO 4545-4, this standard replaces ISO 4545 with GB/T 18449 (all parts) (all departments)

Points), the degree of consistency between the two parts of the standard is as follows.

GB/T 18449.1-2009 Metallic materials - Knoop hardness test - Part 1. Test method (ISO 4545-1.

2005, MOD);

GB/T 18449.2-2012 Metallic materials - Knoop hardness test - Part 2. Examination and calibration of durometer

(ISO 4545-2:2005, MOD);

GB/T 18449.3-2012 Metallic materials - Knoop hardness test - Part 3. Calibration of standard hardness blocks

(ISO 4545-3:2005, MOD);

GB/T 18449.4-2009 Metallic materials Knoop hardness test Part 4. Hardness value table (ISO 4545-4.

2005, IDT).

* Replace ISO /T R16060 with GB/T 26956.

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

This standard was drafted. Shanghai Materials Research Institute, Shanghai Laser Technology Research Institute, Harbin Welding Research Institute Co., Ltd.

1 Scope

This standard specifies the Vickers and Knoop hardness tests for the cross section of laser

and electron beam narrow welds of metallic materials.

The Vickers hardness test force specified in this standard is usually 0.098N~<=98N (HV0.01~<=HV10), Knoop hardness test

The force range is usually no more than 9.8N (HK1).

This standard applies to the hardness test of weld specimens with or without filler wire.

This standard does not apply to hardness testing using laser/arc composite wide weld samples.

The hardness test of non-narrow welds is carried out according to GB/T 2654 and GB/T 27552.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

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

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

1.2005, MOD)

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

ISO 6507-2.2005, MOD)

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

ISO 6507-3.2005, MOD)

GB/T 18449.1 Metallic materials - Knoop hardness test - Part 1. Test methods (GB/T 18449.1-2009,

ISO 4545-1.2005, MOD)

GB/T 18449.2 Knoop hardness test for metallic materials - Part 2. Examination and calibration of hardness testers (GB/T 18449.2-

2012, ISO 4545-2.2005, MOD)

GB/T 18449.3 Knoop hardness test for metallic materials - Part 3. Calibration of standard hardness blocks (GB/T 18449.3-2012,