

DIN EN ISO 4545-1:2018-07 (E)

Metallic materials - Knoop hardness test - Part 1: Test method (ISO 4545-1:2017)

Contents

Page

European foreword	3
Foreword	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Principle	6
5 Symbols and designations	7
5.1 Symbols and designations used in this document	7
5.2 Designation of hardness number	8
6 Testing machine	8
6.1 Testing machine	8
6.2 Indenter	8
6.3 Diagonal measuring system	9
7 Test piece	9
7.1 Test Surface	9
7.2 Preparation	9
7.3 Thickness	9
7.4 Support of unstable test pieces	9
8 Procedure	10
8.1 Test temperature	10
8.2 Test force	10
8.3 Periodic verification	10
8.4 Test piece support	10
8.5 Focus on test surface	10
8.6 Test force application	11
8.7 Prevention of the effect of shock or vibration	11
8.8 Minimum distance between adjacent indentations	11
8.9 Measurement of diagonal length	12
8.10 Calculation of hardness value	12
9 Uncertainty of the results	12
10 Test report	12
Annex A (normative) Procedure for periodic checking of the testing machine, diagonal measuring system and the indenter by the user	14
Annex B (informative) Uncertainty of the measured hardness values	16
Annex C (informative) Knoop hardness measurement traceability	23
Annex D (informative) CCM — Working group on hardness	27
Annex E (informative) Adjustment of Köhler illumination systems	28
Bibliography	29