

DIN EN ISO 4545-1:2024-01 (E)

Metallic materials - Knoop hardness test - Part 1: Test method (ISO 4545-1:2023)

Contents	Page
European foreword	3
Foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Symbols and designations	6
4.1 Symbols and designations used in this document	6
4.2 Designation of hardness number	6
5 Principle	7
6 Testing machine	7
6.1 Testing machine	7
6.2 Indenter	7
6.3 Diagonal measuring system	7
7 Test piece	8
7.1 Test surface	8
7.2 Preparation	8
7.3 Thickness	8
7.4 Support of unstable test pieces	8
7.5 Metallic and other inorganic coatings	8
8 Procedure	9
8.1 Test temperature	9
8.2 Test force	9
8.3 Periodic verification	9
8.4 Test piece support	9
8.5 Focus on test surface	9
8.6 Test force application	10
8.7 Prevention of the effect of shock or vibration	10
8.8 Minimum distance between adjacent indentations	10
8.9 Measurement of diagonal length	11
8.10 Calculation of hardness value	11
9 Uncertainty of the results	11
10 Test report	12
Annex A (normative) Procedure for periodic checking of the testing machine, diagonal measuring system and the indenter by the user	13
Annex B (informative) Uncertainty of the measured hardness values	15
Annex C (informative) Knoop hardness measurement traceability	22
Annex D (informative) CCM — Working group on hardness	26
Annex E (informative) Adjustment of Köhler illumination systems	27
Annex F (normative) Determining the Knoop hardness of metallic and other inorganic coatings	28
Bibliography	32