DIN EN ISO 643:2024-12 (E)

Steels - Micrographic determination of the apparent grain size (ISO 643:2024)

Contents

Page

European foreword ... **3**

Foreword ... **4**

1 Scope ... **5**

2 Normative references ... **5**

3 Terms and definitions ... **5**
3.1 Grains ... 5
3.2 General ... 6

4 Symbols ... **6**

5 Principle ... **7**

6 Selection and preparation of the specimen ... **9**
6.1 Test location ... 9
6.2 Revealing ferritic grain boundaries ... 9
6.3 Revealing austenitic and prior-austenitic grain boundaries ... 9
6.3.1 General ... 9

7 Characterization of grain size ... **10**
7.1 General ... 10
7.1.1 Characterization methods ... 10
7.1.2 Formulae ... 10
7.1.3 Accuracy of the methods ... 10
7.2 Comparison method ... 10
7.3 Planimetric method ... 13
7.4 Intercept method ... 17
7.4.1 General ... 17
7.4.2 Linear intercept method ... 18
7.4.3 Circular intercept method ... 19
7.4.4 Assessment of results ... 19
7.5 Other methods ... 20

8 Test report ... **21**

Annex A (informative) **Methods for revealing austenitic or prior-austenitic grain boundaries in steels** ... **22**

Annex B (normative) **Determination of grain size with standard comparison charts** ... **27**

Annex C (informative) **Evaluation method** ... **39**

Annex D (informative) **Calculation of grain size and confidence interval** ... **41**

Annex E (informative) **Grains of different size indices** ... **44**

Bibliography ... **50**