DIN EN ISO 7500-1:2018-06 (E)

Metallic materials - Calibration and verification of stat ic uniaxial testing machines - Part 1: Tension/compression testing machines - Calibration and verification of the force-measuring system (ISO 7500-1:2018)

Contents

Page

European foreword ... **3**

Foreword ... **4**

1 Scope ... **5**

2 Normative references ... **5**

3 Terms and definitions ... **5**

4 Symbols ... **6**

5 General inspection of the testing machine ... **7**

6 Calibration of the force-measuring system of the testing machine ... **7**

6.1 General ... 7

6.2 Determination of the resolution ... 8

6.2.1 Analogue scale ... 8

6.2.2 Digital scale ... 8

6.2.3 Variation of readings ... 8

6.2.4 Unit ... 9

6.3 Prior determination of the relative resolution of the force indicator ... 9

6.4 Calibration procedure ... 9

6.4.1 Alignment of the force-proving instrument ... 9

6.4.2 Temperature compensation ... 9

6.4.3 Conditioning of the testing machine and force-proving instrument ... 10

6.4.4 Procedure ... 10

6.4.5 Application of discrete forces ... 10

6.4.6 Verification of accessories ... 11

6.4.7 Verification of the effect of differences in piston positions ... 11

6.4.8 Determination of relative reversibility error ... 11

6.5 Assessment of the force indicator ... 12

6.5.1 Relative indication error ... 12

6.5.2 Relative repeatability error ... 13

6.5.3 Agreement between two force-proving instruments ... 13

7 Class of testing machine range ... **14**

8 Verification report ... **14**

8.1 General information ... 14

8.2 Results of verification ... 15

9 Intervals between verifications ... **15**

Annex A (normative) **General inspection of the testing machine** ... **16**

Annex B (informative) **Inspection of the loading platens of the compression testing machines** ... **17**

Annex C (informative) **Uncertainty of the calibration results of the force-measuring system** ... **18**

Bibliography ... **22**