

DIN EN ISO 20504:2023-03 (E)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Mechanical properties of ceramic composites at room temperature - Determination of compressive properties (ISO 20504:2022)

| Contents | Page |
|---|-------------|
| European foreword | 3 |
| Foreword | 4 |
| 1 Scope | 5 |
| 2 Normative references | 5 |
| 3 Terms and definitions | 5 |
| 4 Principle | 7 |
| 5 Apparatus | 7 |
| 5.1 Test machine..... | 7 |
| 5.2 Load train..... | 7 |
| 5.3 Strain measurement..... | 8 |
| 5.3.1 General..... | 8 |
| 5.3.2 Strain gauges..... | 8 |
| 5.3.3 Extensometry..... | 8 |
| 5.4 Data recording system..... | 8 |
| 5.5 Dimension-measuring devices..... | 8 |
| 6 Test specimens | 9 |
| 6.1 General..... | 9 |
| 6.2 Compression between platens..... | 9 |
| 6.3 Test specimen used with grips..... | 11 |
| 7 Test specimen preparation | 14 |
| 7.1 Machining and preparation..... | 14 |
| 7.2 Number of test specimens..... | 14 |
| 8 Test procedure | 14 |
| 8.1 Test mode and rate..... | 14 |
| 8.2 Measurement of test specimen dimensions..... | 14 |
| 8.3 Buckling..... | 14 |
| 8.4 Testing technique..... | 15 |
| 8.4.1 Test specimen mounting..... | 15 |
| 8.4.2 Extensometers..... | 15 |
| 8.4.3 Measurements..... | 15 |
| 8.5 Test validity..... | 15 |
| 9 Calculation of results | 15 |
| 9.1 Test specimen origin..... | 15 |
| 9.2 Compressive strength..... | 16 |
| 9.3 Strain at maximum compressive force..... | 16 |
| 9.4 Proportionality ratio or pseudo-elastic modulus, elastic modulus..... | 16 |
| 10 Test report | 17 |
| Annex A (informative) Illustration of elastic modulus | 19 |
| Bibliography | 21 |