

ISO 17565:2003-12 (E)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Test method for flexural strength of monolithic ceramics at elevated temperature

| Contents | | Page |
|--|--|-------------|
| 1 | Scope | 1 |
| 2 | Normative references | 1 |
| 3 | Terms and definitions | 1 |
| 4 | Principle | 3 |
| 5 | Apparatus | 3 |
| 5.1 | Testing machine | 3 |
| 5.2 | Heating device | 3 |
| 5.3 | Temperature measuring and indicating instruments | 4 |
| 5.4 | Testing fixture | 5 |
| 5.5 | Micrometer | 9 |
| 6 | Test pieces | 9 |
| 6.1 | Test piece size | 9 |
| 6.2 | Test piece preparation | 10 |
| 7 | Procedure | 10 |
| 8 | Calculation | 13 |
| 8.1 | Standard formula for the flexural strength in four-point flexure | 13 |
| 8.2 | Standard formula for the flexural strength in three-point flexure | 14 |
| 8.3 | Corrections for chamfer size | 14 |
| 8.4 | Corrections for thermal expansion | 14 |
| 8.5 | Mean strength and standard deviation | 15 |
| 9 | Accuracy and precision | 15 |
| 10 | Test report | 15 |
| 11 | Strength scaling factors | 16 |
| Annex A (informative) General information | | 17 |
| Annex B (normative) Chamfer correction factors | | 18 |
| Annex C (normative) Corrections for thermal expansion | | 21 |
| Annex D (informative) Weibull scaling factors | | 23 |
| Annex E (informative) VAMAS round robin | | 25 |
| Bibliography | | 26 |