ISO 14704:2016-04 (E)

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

Contents

Page

Foreword iv

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 Test fixture 3
5.2.1 General 3
5.2.2 Bearings 4
5.2.3 Four-point fixture: semi-articulating 4
5.2.4 Four-point fixture: fully articulating 4
5.2.5 Three-point fixture: semi-articulating 4
5.2.6 Three-point fixture: fully articulating 5
5.2.7 Positioning of bearings 5
5.2.8 Fixture material 6
5.3 Micrometer 6

6 Test pieces 6
6.1 Test piece size 6
6.1.1 Machined test pieces 6
6.1.2 As-fired or heat-treated test pieces 6
6.2 Test piece preparation 7
6.2.1 General 7
6.2.2 As-fired 7
6.2.3 Customary machining procedure 7
6.2.4 Component-matched procedure 7
6.2.5 Basic machining procedure 7
6.2.6 Parallelism, orthogonality and chamfer sizes 8
6.2.7 Handling of test pieces 9
6.2.8 Number of test pieces 9

7 Procedure 9

8 Calculation 11

9 Test report 12

10 Strength scaling factors 13

Annex A (informative) General information 14

Annex B (normative) Test fixtures 15

Annex C (informative) Typical fracture patterns in ceramic test pieces 21

Annex D (informative) Chamfer correction factors 23

Annex E (informative) Weibull scaling factors 26

Bibliography 28