ISO 20343:2017-01 (E)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Test method for determining elastic modulus of thick ceramic coatings at elevated temperatur e

Contents

Page

Foreword iv

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Principle 2

5 Apparatus 2
5.1 Elastic modulus testing machine 2
5.2 Heating system 2
5.2.1 General 2
5.2.2 Temperature stability 2
5.2.3 Test temperature uniformity 2
5.2.4 Furnace heating rate 2
5.2.5 Furnace stability 2
5.3 Temperature measuring and indicating instruments 2
5.3.1 General 2
5.3.2 Thermocouples 3
5.3.3 Verification of the thermocouple temperature measuring system 3
5.4 Dimension-measuring device 3
5.5 Test fixture 3
5.5.1 General 3
5.5.2 Fixture material 3

6 Test pieces 3
6.1 Test piece size 3
6.2 Test piece preparation and storage 4

7 Test procedure 4
7.1 Measurement of the size and mass of the test-pieces 4
7.2 Measurement of elastic modulus of coating at elevated temperature 4

8 Calculation of results 6
8.1 Standard formula for elastic modulus of coating 6
8.2 Mean value and standard deviation for elastic modulus 6
8.3 Variation of elastic modulus with temperature 7

9 Analysis of precision and uncertainty 8

10 Test report 8

Bibliography 9