ISO 19674:2025-06 (E)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Methods of test for ceramic coatings - Determination of internal stress in ceramic coatings by application of the Stoney formula

Contents

Page

Foreword ... **iv**

Introduction ... **v**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **1**

4 Principle ... **1**

5 Apparatus ... **2**

6 Preparation of test specimens ... **3**
6.1 Material ... 3
6.2 Sample geometry ... 3
6.3 Sample surface finish ... 3
6.4 Sample dimensions ... 3

7 Procedure ... **4**
7.1 Measuring range and initial profile ... 4
7.2 Deposition of the coating ... 4
7.3 Coating thickness ... 5
7.4 Adjusting the sample geometry after deposition of the coating ... 5
7.5 Measuring the final profile ... 5
7.6 Calculation of stress ... 6
7.6.1 $h_f / h_s < 0{,}02$ ... 6
7.6.2 $0{,}02 \leq h_f / h_s < 0{,}1$ ... 7
7.7 Number of repeat measurements ... 7

8 Limits to method ... **7**

9 Test report ... **7**

Annex A (informative) **Determination of suitable dimensions for the test sample** ... **9**

Annex B (informative) **Internal stress calculation in ceramic coating of real components** ... **11**

Bibliography ... **13**