ISO 21456:2025-03 (E)

Determination of the residual stress of TGO layer in thermal barrier coating by photoexcitation fluorescence piezoelectric spectroscopy

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 Principle 3
4.1 General 3
4.2 Principle of measuring residual stress by photo-excited fluorescence piezoelectric spectroscopy 3

5 Test methods 3
5.1 General 3
5.2 Test specimen 3
5.3 PFPS device calibration 4
5.4 Setting of detection conditions 4
5.5 Sample focusing 4
5.6 Detection of Raman peaks 4
5.7 Data acquisition 4

6 Calculation of stress 5

7 Reliability 7

8 Test report 7

Annex A (informative) Example of the determination of the residual stress of the TGO layer in TBC by photoexcited fluorescence piezoelectric spectrum 9

Bibliography 11