ISO 23788:2012-07 (E)

Metallic materials - Verification of the alignment of fatigue testing machines

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 Symbols 3

5 Measurement requirements 4
5.1 Testing machine 4
5.2 Alignment cell 4
5.3 Design and manufacturing 4
5.4 Machining 6
5.5 Inspection before attaching the strain gauges 6
5.6 Instrumentation with strain gauges 6
5.7 System checks 7

6 Alignment measurement calculations 7
6.1 General 7
6.2 Cylindrical alignment cell 7
6.3 Thick rectangular alignment cell 9
6.4 Thin rectangular alignment cell 9
6.5 Classification of machine alignment 9

7 Procedure for verification of machine alignment 10
7.1 Purpose and frequency 10
7.2 Procedure 10

8 Reporting 11
8.1 Basic information 11
8.2 Special information 12

Annex A (informative) Causes of specimen bending and misalignment in fatigue testing machines 17

Annex B (normative) Evaluating uncertainty in the alignment measurement 19

Annex C (informative) Method for measuring machine lateral stiffness 22

Annex D (informative) Three-strain gauge configuration 24

Annex E (informative) Determination of bending contribution due to inherent imperfections in a cylindrical alignment cell device 26

Annex F (informative) Numerical example 27

Annex G (normative) Alignment gauge -- A method for qualitative assessment of alignment of test systems for cylindrical specimens 28

Bibliography 30