ISO 16842:2014-10 (E)

Metallic materials - Sheet and strip - Biaxial tensile testing method using a cruciform test piece

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Principle 2

5 Test piece 2
5.1 Shape and dimensions 2
5.2 Preparation of the test pieces 2

6 Testing method 4
6.1 Testing machine 4
6.2 Measurement method of force and strain 4
6.3 Installation of the test piece to a biaxial tensile testing machine 6
6.4 Testing methods 7

7 Determination of biaxial stress-strain curves 7
7.1 General 7
7.2 Determination of the original cross-sectional area of the test piece 7
7.3 Determination of true stress 7
7.4 Determination of true strain 8
7.5 Determination of true plastic strain 8

8 Test report 10
8.1 Information in the report 10
8.2 Additional note 11

Annex A (informative) Method for measuring a yield surface 12

Annex B (informative) Factors affecting the maximum equivalent plastic strain applicable to the gauge area of the test piece 17

Annex C (informative) Biaxial tensile testing machine 19

Bibliography 23