ISO 527-4:2023-03 (E)

Plastics - Determination of tensile properties - Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 Principle 5

5 Apparatus 5

6 Test specimens 5
6.1 Shape and dimensions 5
6.2 Preparation of specimens 10
6.2.1 General 10
6.2.2 End tabs for type 3 specimens 10
6.2.3 Applications of end tabs for type 3 specimens 10
6.3 Gauge marks 10
6.4 Checking the specimens 10
6.5 Anisotropy 11

7 Number of specimens 11

8 Conditioning 11

9 Procedure 11
9.1 Test atmosphere 11
9.2 Measurement of specimen dimensions 11
9.3 Clamping 11
9.4 Prestresses 11
9.5 Setting of extensometers and strain gauges and placing of gauge marks 11
9.6 Speed of testing 12
9.6.1 For type 1B test specimens 12
9.6.2 For type 2, type 3 and type 4 test specimens 12
9.7 Recording of data 12

10 Calculation and expression of results 12
10.1 Calculation of all properties for parallel sided specimens 12
10.2 Failure location related calculation of tensile strength for type 4 specimens 12

11 Precision 12

12 Test report 13

Annex A (informative) Alignment of specimens 14

Annex B (informative) Testing with tapered tensile specimen geometry without tabs (type 4) 16

Annex C (informative) Unbonded tabs or gripping condition without tabs using fine grip face 19

Annex D (normative) Specimen preparation for type 2 and type 3 22

Annex E (normative) Failure location related calculation of tensile strength for type 4 specimens 24

Bibliography 28