ISO 527-1:2019 (E)

Plastics — Determination of tensile properties — Part 1: General principles

Contents

Foreword

1 Scope

2 Normative references

3 Terms and definitions

4 Principle and methods

4.1 Principle
4.2 Method

5 Apparatus

5.1 Testing machine
5.1.1 General
5.1.2 Test speeds
5.1.3 Grips
5.1.4 Force indicator
5.1.5 Strain indicator
5.1.5.1 Extensometers
5.1.5.2 Strain gauges
5.1.6 Recording of data
5.1.6.1 General
5.1.6.2 Recording of strain data
5.1.6.3 Recording of force data
5.2 Devices for measuring width and thickness of the test specimens

6 Test specimens

6.1 Shape and dimensions
6.2 Preparation of specimens
6.3 Gauge marks
6.4 Checking the test specimens
6.5 Anisotropy

7 Number of test specimens

8 Conditioning

9 Procedure

9.1 Test atmosphere
9.2 Dimensions of test specimen
9.3 Gripping
9.4 Prestresses
9.5 Setting of extensometers
9.6 Test speed
9.7 Recording of data

10 Calculation and expression of results

10.1 Stress
10.2 Strain
10.2.1 Strains determined with an extensometer
10.2.2 Nominal strain
10.2.2.1 General
10.2.2.2 Method A

10.2.2.3 Method B
10.3 Tensile modulus
10.3.1 General
10.3.2 Chord slope
10.3.3 Regression slope
10.4 Poisson's ratio
10.5 Statistical parameters
10.6 Significant figures

11 Precision

12 Test report

Annex A (informative) Determination of strain at yield

Annex B (informative) Extensometer accuracy for the determination of Poisson's ratio

Annex C (normative) Calibration requirements for the determination of the tensile modulus

C.1 General
C.2 Calibration procedure
C.2.1 General
C.2.2 Calibration-apparatus accuracy requirements
C.2.3 Calibration report

Page count: 26