

DIN EN ISO 527-1:2019-12 (E)

Plastics - Determination of tensile properties - Part 1: General principles (ISO 527-1:2019)

Contents		Page
European foreword		4
Foreword		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	7
4	Principle and methods	11
4.1	Principle	11
4.2	Method	11
5	Apparatus	12
5.1	Testing machine	12
5.1.1	General	12
5.1.2	Test speeds	12
5.1.3	Grips	12
5.1.4	Force indicator	13
5.1.5	Strain indicator	13
5.1.6	Recording of data	15
5.2	Devices for measuring width and thickness of the test specimens	16
6	Test specimens	16
6.1	Shape and dimensions	16
6.2	Preparation of specimens	16
6.3	Gauge marks	16
6.4	Checking the test specimens	16
6.5	Anisotropy	17
7	Number of test specimens	17
8	Conditioning	18
9	Procedure	18
9.1	Test atmosphere	18
9.2	Dimensions of test specimen	18
9.3	Gripping	18
9.4	Prestresses	19
9.5	Setting of extensometers	19
9.6	Test speed	19
9.7	Recording of data	20
10	Calculation and expression of results	20
10.1	Stress	20
10.2	Strain	20
10.2.1	Strains determined with an extensometer	20
10.2.2	Nominal strain	21
10.3	Tensile modulus	22
10.3.1	General	22
10.3.2	Chord slope	22
10.3.3	Regression slope	22
10.4	Poisson's ratio	22
10.5	Statistical parameters	23
10.6	Significant figures	23
11	Precision	23
12	Test report	23

Annex A (informative) Determination of strain at yield	25
Annex B (informative) Extensometer accuracy for the determination of Poisson's ratio	28
Annex C (normative) Calibration requirements for the determination of the tensile modulus	29
Bibliography	31