

# ISO 17281:2018 (E)

## Plastics — Determination of fracture toughness (GIC and KIC) at moderately high loading rates (1 m/s)

---

### Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Test specimens
4.1	Specimen geometry and preparation
4.2	Crack length and number of test replicates
4.2.1	Determination of KIC
4.2.2	Determination of GIC
4.3	Measurement of test specimen dimensions
5	Test conditions
5.1	Loading mode
5.2	Test speed
5.3	Test atmosphere and temperature
6	Test equipment
6.1	Loading machine
6.2	Loading rigs
6.3	Instrumentation
7	Control of dynamic effects
7.1	Electronic filtering
7.2	Mechanical damping
7.3	Damping level
7.4	Check on speed
8	Data handling
8.1	Analysis of the test records and identification of fracture initiation
8.2	Energy correction
8.2.1	General
8.2.2	Test piece indentation, machine compliance and damper compression
8.2.3	Kinetic energy and inertial loads
9	Expression of results
9.1	Determination of KIC
9.2	Determination of $\sigma_y$
9.3	Determination of GIC
10	Precision
11	Test report
Annex A	(informative) Estimation of curve fit parameters
Annex B	(informative) Recommended test report forms

**Annex C (informative) Testing of plastics containing short fibres**

- C.1 General**
- C.2 Identification of fracture initiation**
  - C.2.1 Determination of KIC**
  - C.2.2 Determination of GIC**

**Page count: 28**