

ISO 13927:2023-08 (E)

Plastics - Simple heat release test using a conical radiant heater and a thermopile detector

Contents		Page
Foreword		v
Introduction		vi
1 Scope		1
2 Normative references		1
3 Terms and definitions		1
4 Symbols		2
5 Principle		2
6 Apparatus		2
6.1 General.....		2
6.2 Cone-shaped radiant electrical heater.....		4
6.3 Heat flux controller.....		4
6.4 Chimney and thermopiles.....		5
6.5 Specimen holder.....		5
6.6 Retainer frame.....		5
6.7 Fume extraction system.....		7
6.8 Ignition circuit.....		8
6.9 Ignition timer.....		8
6.10 Heat flux meter.....		8
6.11 Calibration burner.....		8
6.12 Data collection system.....		8
7 Suitability of a product for testing		10
7.1 Surface characteristics.....		10
7.2 Asymmetrical products.....		10
7.3 Thin materials.....		10
7.4 Composite specimens.....		10
7.5 Dimensionally unstable materials.....		10
7.6 Materials that require testing under compression.....		11
8 Specimen construction and preparation		12
8.1 Specimens.....		12
8.2 Conditioning of specimens.....		12
8.3 Preparation.....		13
8.3.1 Specimen wrapping.....		13
8.3.2 Specimen preparation.....		13
8.3.3 Preparing specimens of materials that require testing under compression.....		13
9 Calibration		14
9.1 Heater calibration.....		14
9.2 Thermopile calibration.....		14
9.2.1 General.....		14
9.2.2 Initial calibration.....		14
9.2.3 Daily calibration.....		15
10 Test procedure		15
10.1 General precautions.....		15
10.2 Initial preparation.....		15
10.3 Procedure.....		16
11 Precision		16

12	Test report	16
Annex A	(normative) Calibration of the heat flux meter	18
Annex B	(informative) Guidance notes for operators	19
Annex C	(informative) Guidance on measuring mass loss during testing	20
Annex D	(informative) Example of thermopile calibration — Relation of heat release and thermopile output	21
Annex E	(informative) Calculation of effective critical heat flux for ignition	23
Bibliography	24