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# Flammability test equipment

## Description

The flammability rig comprises two major assemblies:

A supporting fixture for the test sample, which consists of a cast aluminium Sheffield head, (for complete masks), and a finger clamp (suitable for securing materials, components, etc.). The headform has a connector for a breathing machine or for measuring leak tightness without removing the mask from the headform. Adjustment is provided to enable the sample to be positioned vertically at the correct height above the burners and horizontally to ensure that the sample is located over all, or just one, of the burners, as specified in the relevant product test standard.



The main body, which has an array of six propane gas burners and the means to control the gas supply to them. It incorporates an electric motor and mechanical drive mechanism, enabling the test sample to be passed through the flame(s) at a range of speeds. The vertical position of each burner is adjustable, in order to enable setting the required distance from the burner tip to the sample under test.

The gas is supplied to each of the burners from a cylinder of propane (not included), via a shut-off valve, flowmeter and manifold. Each burner incorporates its own flow control valve for ambient air.

Gauges, a thermocouple probe and digital electronic thermometer are supplied to assist in setting the burners and measuring the flame temperature.

Typically, the rig is operated in either of two modes:

Automatic – the sample is moved into the flame where it pauses for preset time (2, 5 or 12 seconds) before being moved out.

Manual – the sample is moved through the present flame at a preset speed (preset to 60mm/s)

**Continued on page 2**

# Flammability test equipment (continued)

## Services required

Floor mounted.
110/230 volts AC, 50/60Hz, mains electricity.
Gas supply: Propane >95% pure, with an adjustable regulator with a range 0.2-5 bar (purchaser to supply). Connection to the equipment is via a 8mm hosetail.
WARNING! Ensure that a flashback arrester is fitted to the propane cylinder.
Fumes may be generated whilst in use. Use in a well-ventilated area or use an exhaust ventilation system.
A stopwatch.
Screwdriver PH2.

The rig is designed to operate in the conditions specified by the relevant standards listed below [typically (16 to 32) °C and (50 ± 30) %RH]. Storage conditions should be restricted to (5 to 35) °C and <85 %RH.

## Approximate dimensions and weight

| Item | Width (mm) | Depth (mm) | Height (mm) | Weight (kg) |
|---|---|---|---|---|
| Rig | 590 | 590 | 860 to the base of the burners<br>1640 overall | 65 |

Please note that the end of the moving arm describes a circle 740mm from the centre of the vertical shaft.

## Relevant standards

The equipment complies with the test equipment specified in the following standards, or the standards called up by them:

AS/NZS 1716:2012, clauses 2.1.9 & 7.4.2.7
BS 8468-2:2020, clause 5.8
EN 136:1998, clause 7.6
EN 137:2006, clause 6.11.2
EN 140:1998, clause 6.6
EN 149:2001, clause 7.11
EN 403:2004, clause 6.14
EN 405:2001, clause 7.13
EN 1061:1996, clause 6.15
EN 1146:2005, clause 6.13.3
EN 1827:1999, clause 7.5
EN 12941:2023, clause 5.18
EN 13274-4:2020 method 1, 2 & 3, clauses 6, 7 & 8
EN 12942:2023, clause 5.18
EN 13794:2002, clause 6.18
EN 14593-1:2018, clause 4.10
EN 14593-2:2005, clause 5.10
EN 14594:2018, clause 5.10