Appendix A
(normative)

Figures A.1 to A.9

Figure/Table	Description
A.1	Bubble leak detector
A.2	Dew plate
A.3	Flue gas sampling hood — Rectangular
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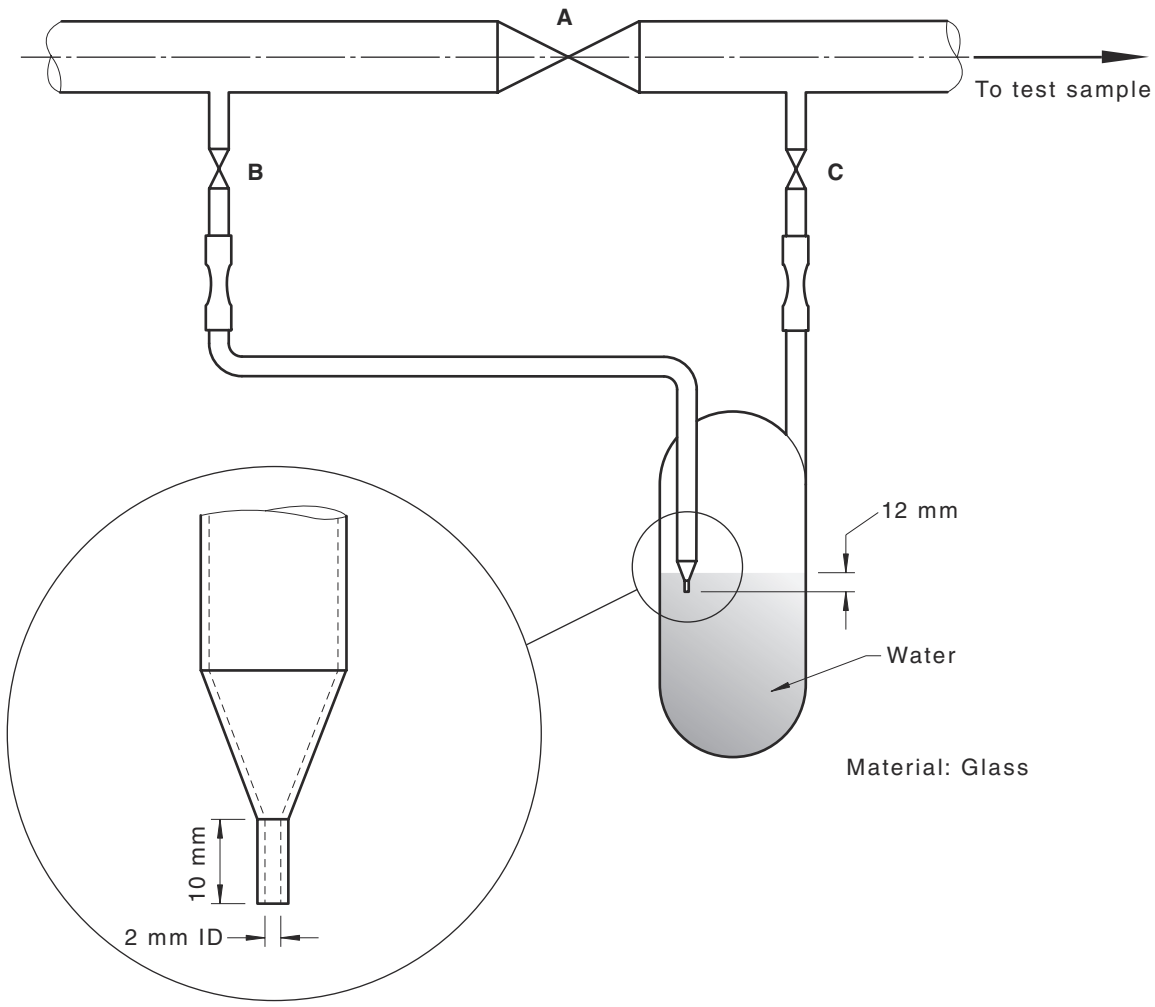
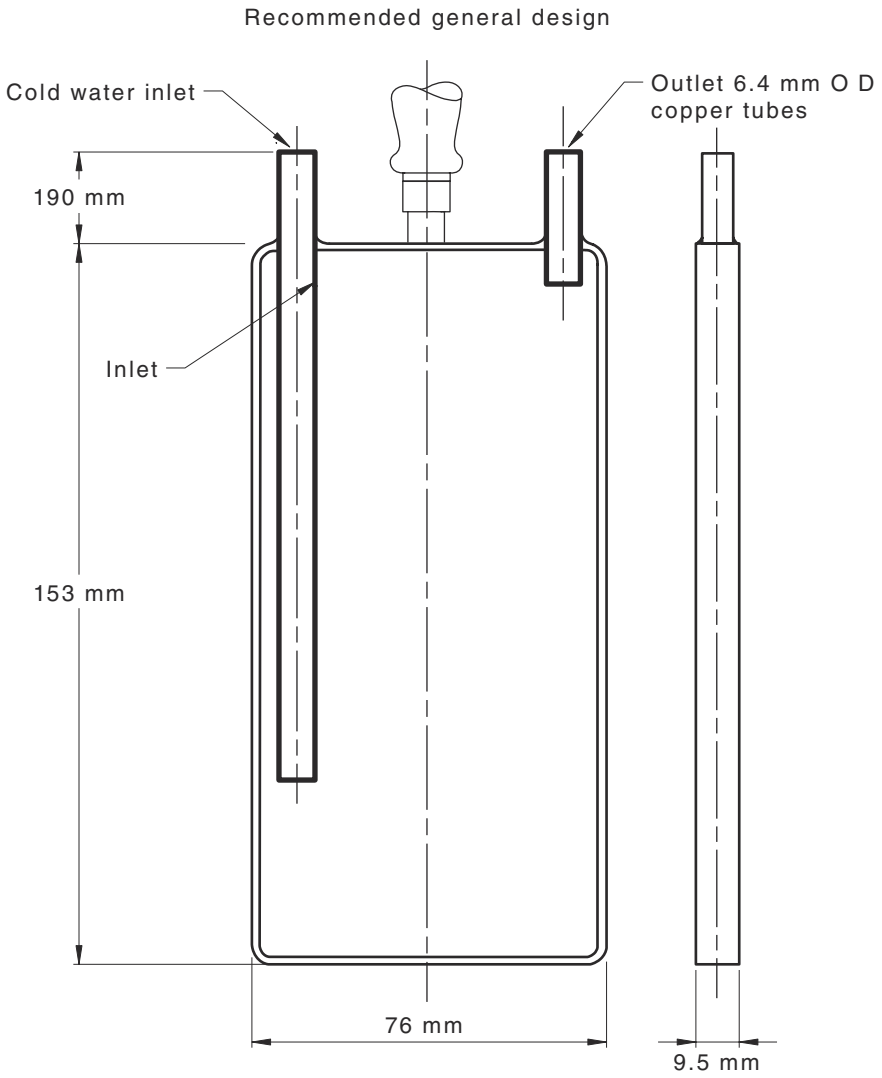
A.5	Hood for open burners for vessels
A.6	Flue gas sampling hood and vessel for open burner combustion tests
A.7	Flue gas sampling hood probe
A.8	Table of standard test vessel specifications
A.9	Test apparatus ignition at reduced pilot test



NOTE To operate leak tester close cock "A" and open cocks "B" and "C", bubbles rising from the dip tube indicate the passage of gas.

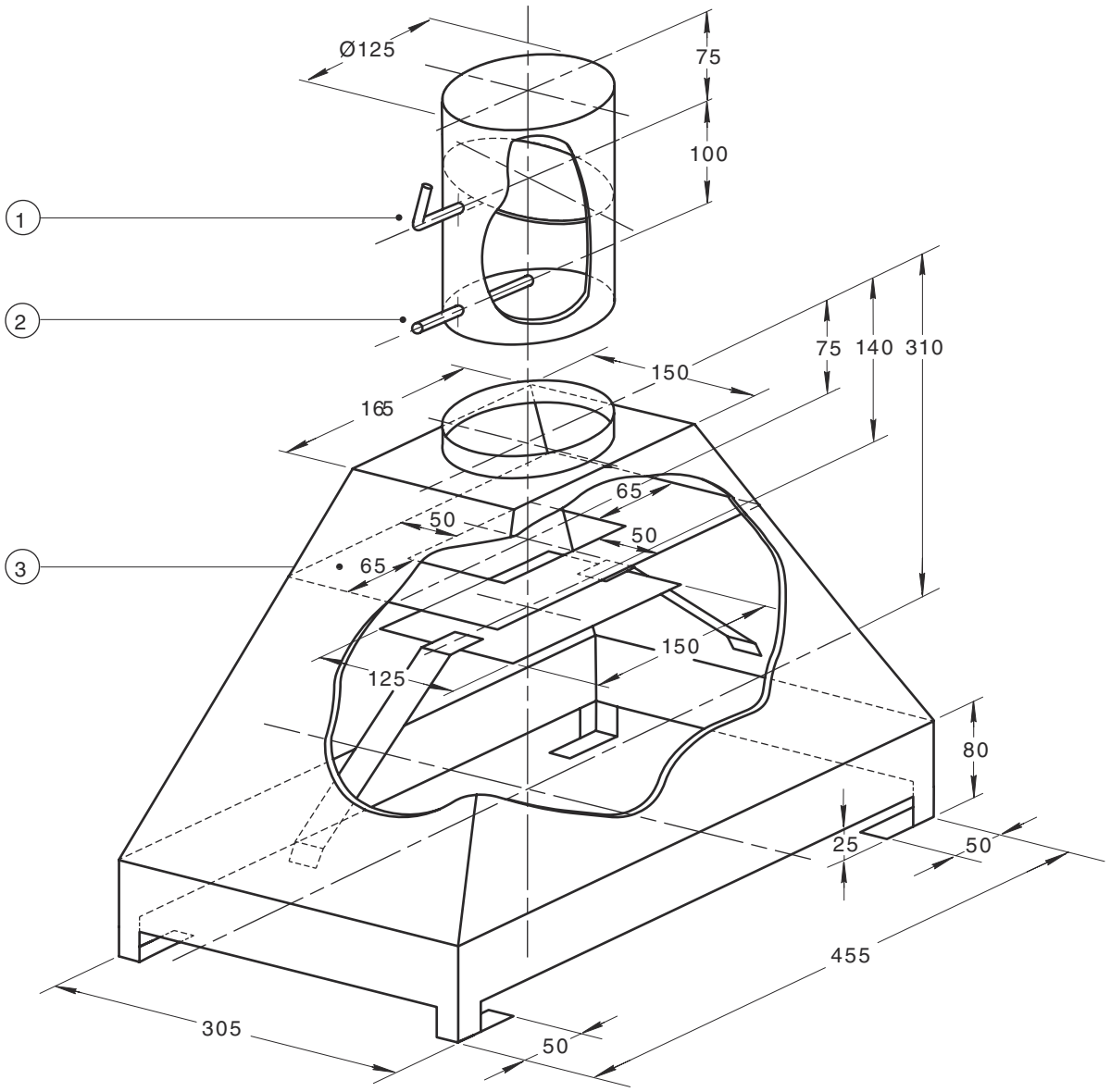
Figure A.1 — Bubble leak detector



Material: 1.20 mm chrome plated copper or brass.

Figure A.2 — Dew plate

Dimensions in millimetres



① Regulator with friction spring

② 8 mm diameter sampling probe (aluminium or stainless steel)

③ Annular baffle

Material: 0.58 mm aluminium or stainless steel

Figure A.3 — Flue gas sampling hood — Rectangular

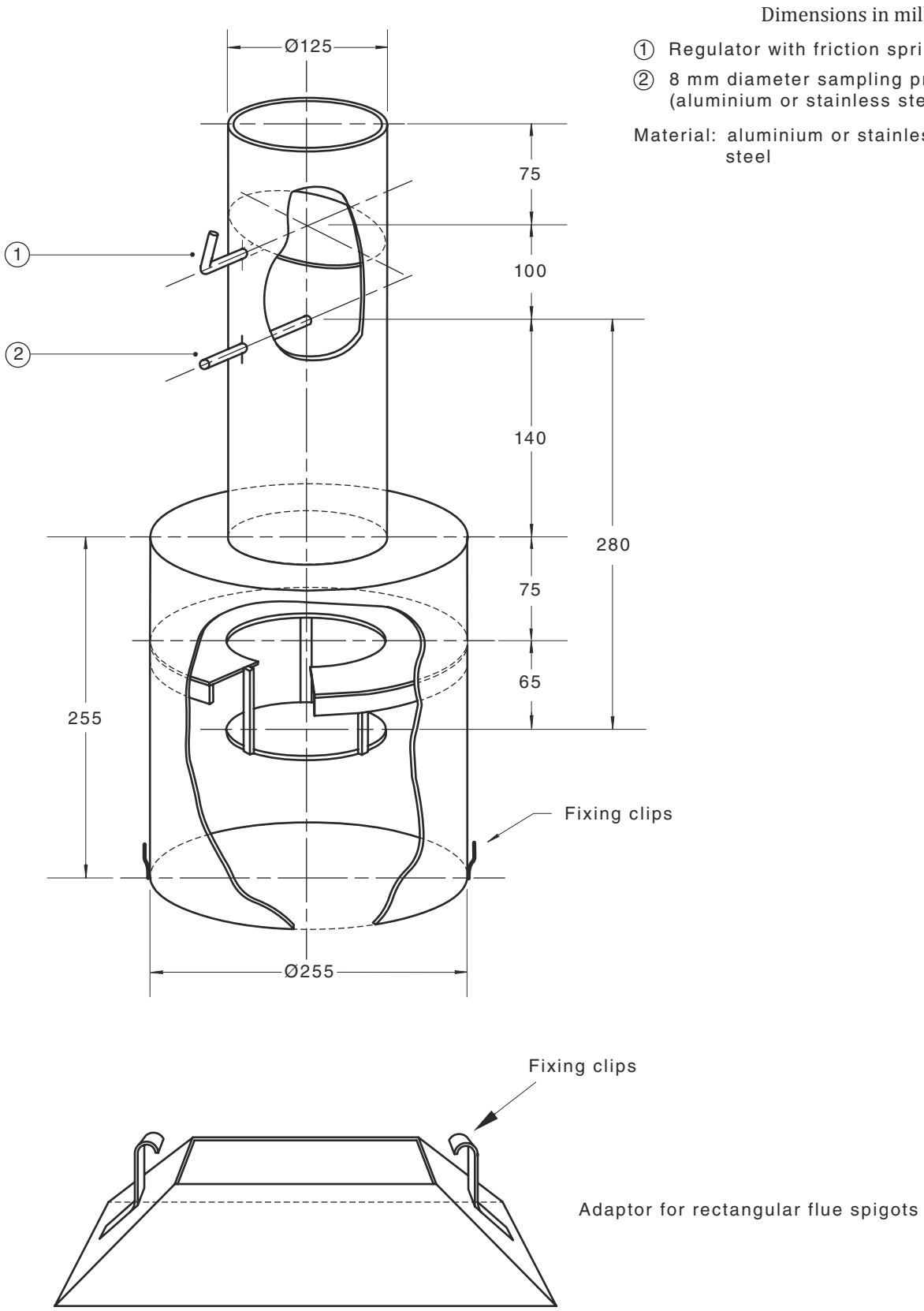
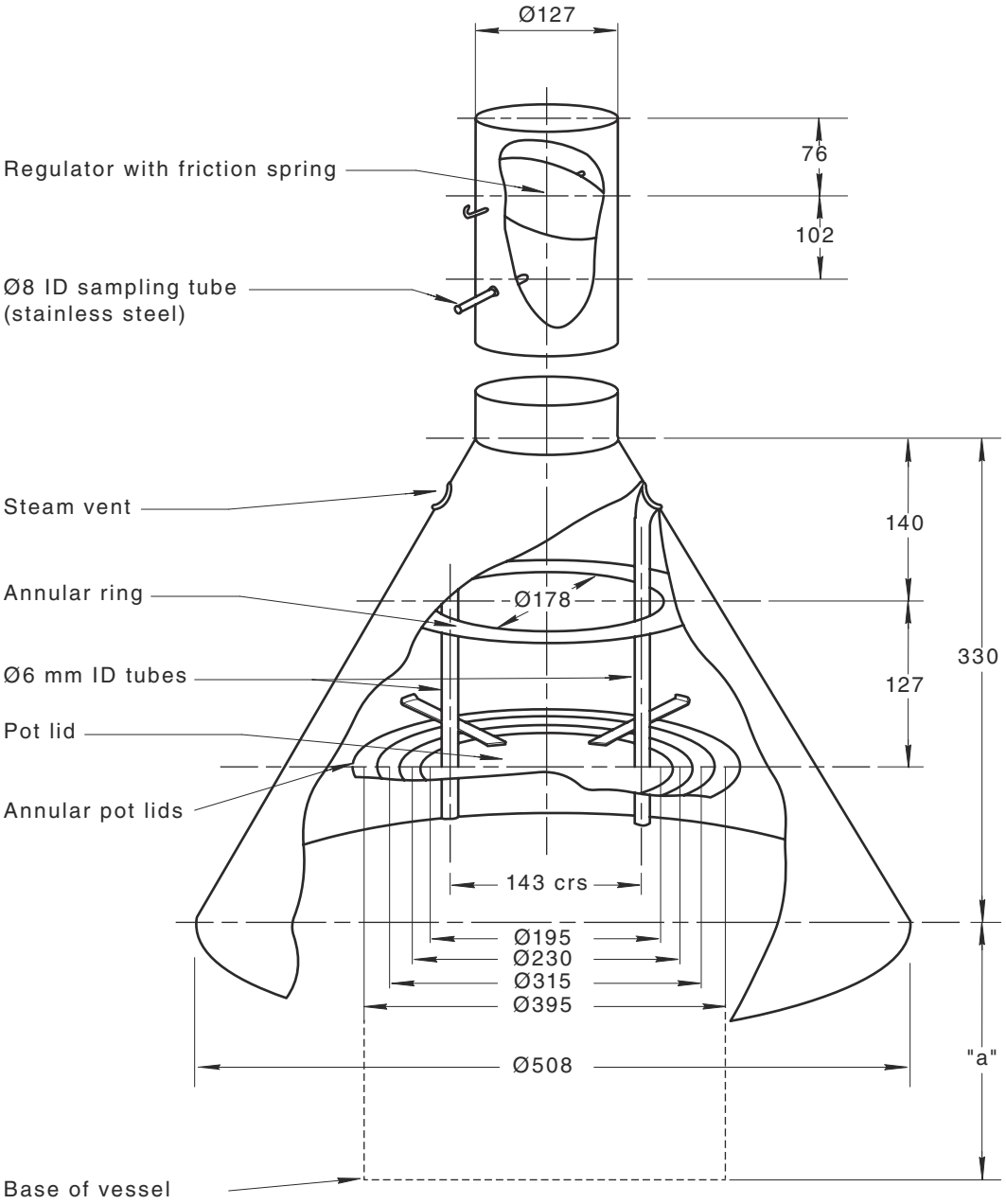


Figure A.4 — Flue gas sampling hood — Circular

Dimensions in millimetres



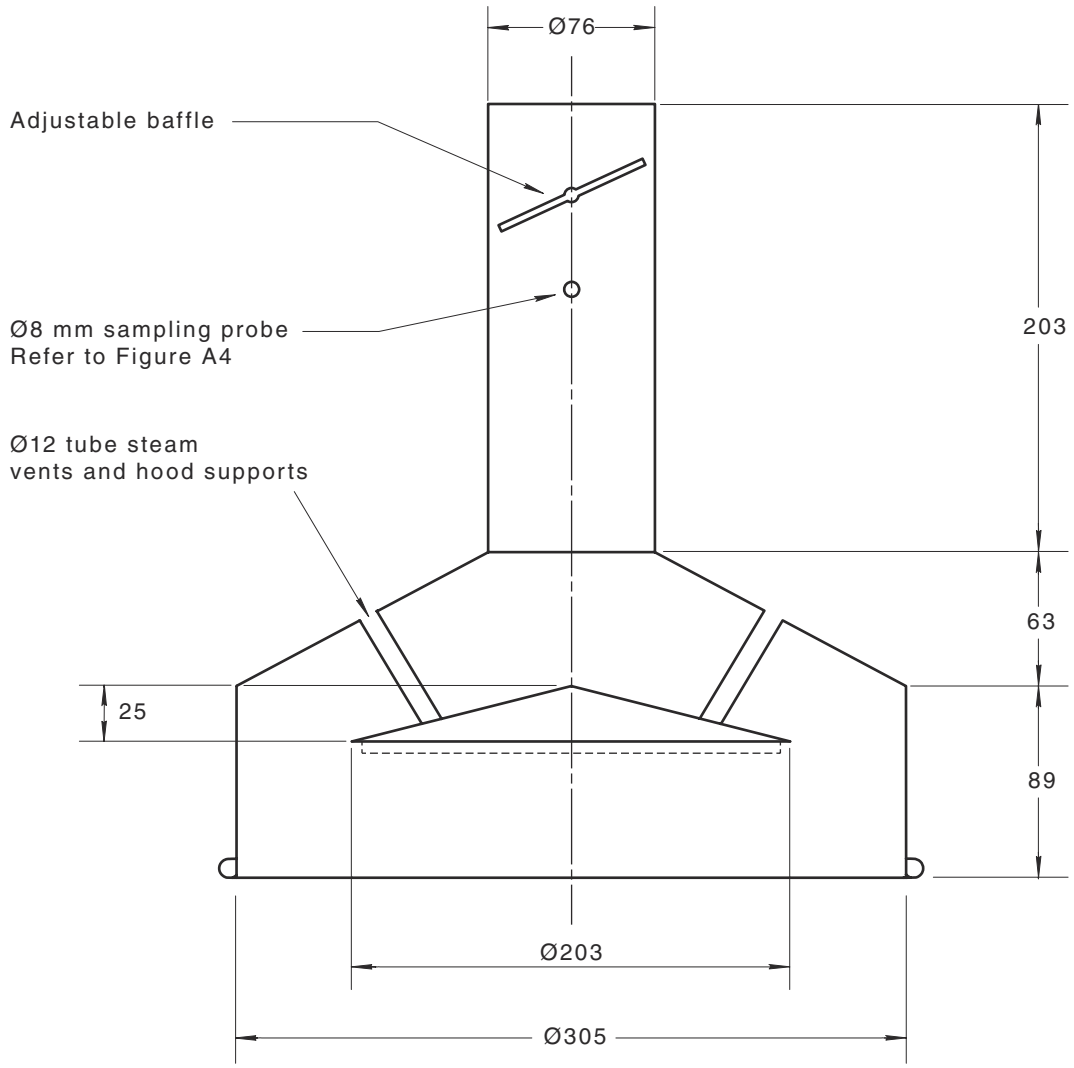
Key

Dimension “a”	Vessel size (diameter)
77	195
92	230
127	315
377	395

Material: aluminium or stainless steel

Figure A.5 — Hood for open burners for vessels

Dimensions in millimetres



Material:

Vessel aluminium or stainless steel

Hood aluminium or stainless steel

Figure A.6 — Flue gas sampling hood and vessel for open burner combustion tests

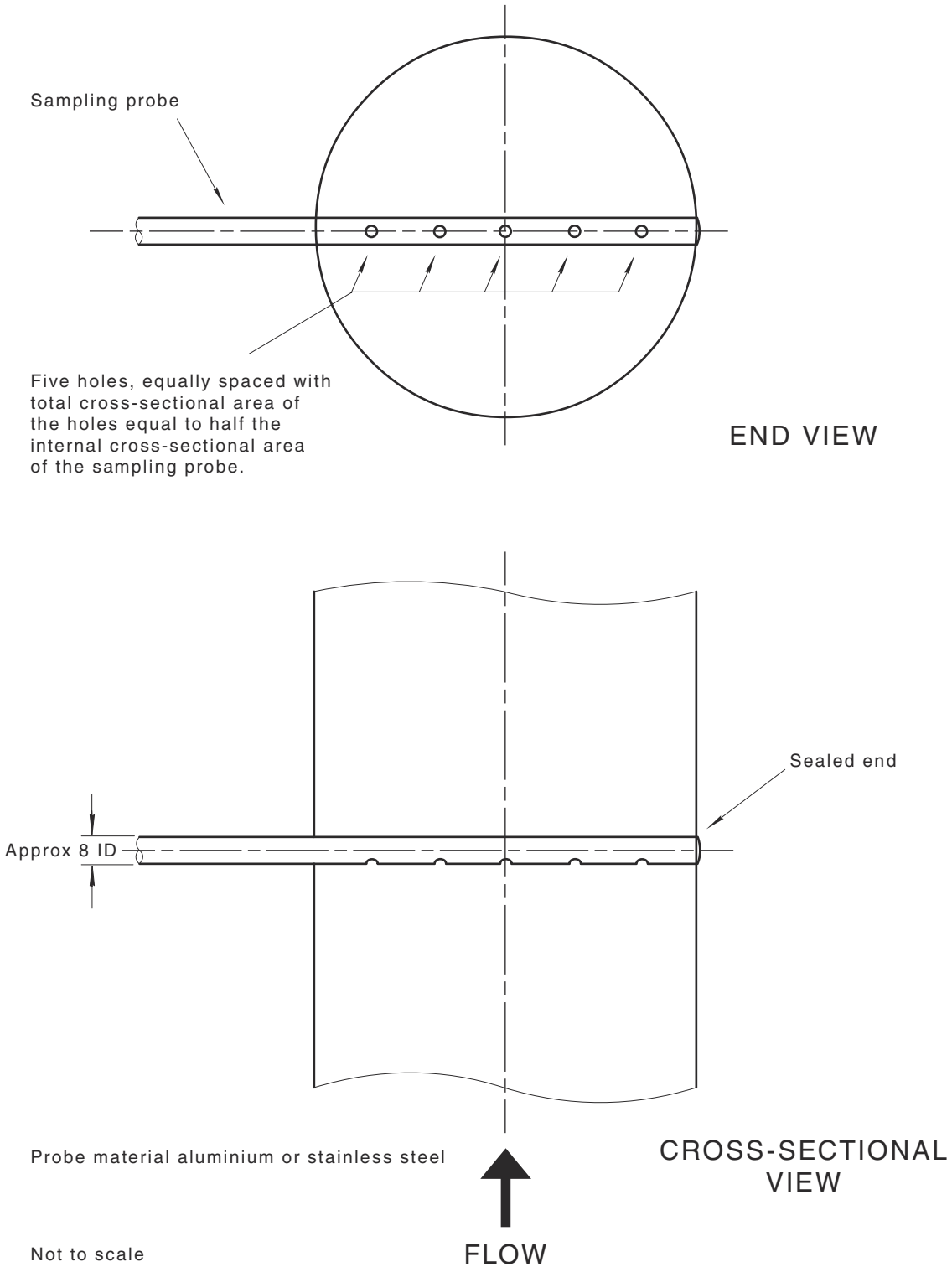


Figure A.7 — Flue gas sampling hood probe

Table A.8 — Standard test vessel specifications

Burner	Vessel		
Gas consumption MJ/h	Diameter mm	Height mm	Water depth mm
0 to 12	195	140	85 ± 10
Over 12 and up to 15	230	155	100 ± 10
Over 15 and up to 20	315	190	125 ± 10
Over 20	395	440	325 ± 10

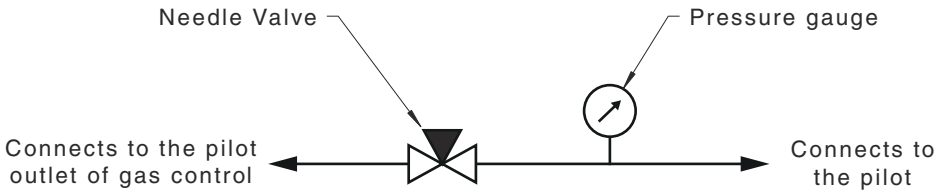


Figure A.9 — Test apparatus ignition at reduced pilot test

Appendix B
(normative)

Test methods

B.1 Gas leakage test (MOT 3.3)

B.1.1 Scope

This method sets out the procedure to assess the gas leakage of an appliance.

B.1.2 Principle

The appliance is connected to a supply of air at the appropriate pressure and any leakage is observed and measured. The tests are carried out at ambient temperature and a pressure of 1.5 times rated working pressure or 14 kPa, whichever is the greater upstream of the appliance.

B.1.3 Apparatus

The following apparatus shall be used:

(a) Leak detector capable of measuring 1 mL/min with an accuracy of ± 0.3 mL/min, e.g. bubble leak detector (see Figure A.1), electronic leak detector.

(b) Pressure gauge with an appropriate range and an accuracy of ± 5 %.

(c) Suitable timing device.

B.1.4 Materials

The following materials shall be used:

(a) A supply of air at the appropriate pressure.

(b) Suitable materials to seal injectors.

B.1.5 Preparation of apparatus

The apparatus shall be prepared as follows:

(a) Install the appliance in accordance with Clause 3.2.

(b) Set up test equipment.

(c) Check the leak detector and its fittings for gas tightness. If using a bubble leak detector, adjust to the correct water level.

B.1.6 Procedure

The procedure shall be as follows:

(a) Seal all injectors, including pilot injectors.

(b) Connect the leak detector to the inlet gas connection of the appliance.

(c) Connect a pressure gauge to the pressure test point.

(d) Close all control valves on the appliance and supply air at the required pressure to the inlet of the leak detector.

(e) Open the pressure regulator and any safety shut off valve by heating the actuating element or by other means, to simulate the appliance being in operation.

(f) Allow approximately 1 min for pressures to stabilize.

(g) Check and record the test point pressure.

(h) If using a bubble leak detector, ensure valve "A" is closed and valves "B" and "C" are opened so that the air is directed through the dip tube (see Figure A.1).

(i) Measure the leakage rate.

(j) If the pressure measured at the appliance test point in Step (g) was less than the greater of 1.5 times the appliance rated working pressure or 14.0 kPa, repeat Steps (e) to (i) using the appropriate pressure at both the inlet and manifold of the appliance.

(k) Systematically check for leakage up to and including each injector by opening each control valve in turn and sealing the injector orifice, including the pilot line.

B.1.7 Test report

All relevant observations shall be reported, including the maximum measured leakage rate.

B.2 Gas consumption (MOT 3.4)

B.2.1 Scope

This method sets out the procedure to determine the gas consumption of a burner or a set of burners of an appliance (or pilot).

B.2.2 Principle

The appliance is supplied with the appropriate gas and the test point pressure is carefully set to the nominal value. The gas rate to all burners is measured accurately 15 min after ignition.

It is necessary to obtain the heating value, dry relative density of the gas, the gas temperature and to note whether the gas is dry or saturated when passing through the gas meter, so that the correct gas consumption can be calculated.

B.2.3 Apparatus

The following apparatus shall be used:

(a) Equipment as specified in Appendix D.

(b) Suitable timing device.

B.2.4 Materials

Supply of appropriate gas (see Clause 3.1) at normal test gas pressure.

B.2.5 Preparation of apparatus

The apparatus shall be prepared as follows:

(a) Install the appliance in accordance with Clause 3.2.