BS 5852 Assessment of the Ignitability of Upholstered Seating by Smouldering and Flaming Ignition Sources- Testing Equipment

Description

1. Purpose and Scope

BS 5852:1990 describes laboratory methods for assessing the ignitability of upholstered seating material combinations and complete items of seating when exposed to smouldering and flaming ignition sources. The test programme is intended to represent a stepped range of accidental ignition severities rather than a continuous fire-performance scale.

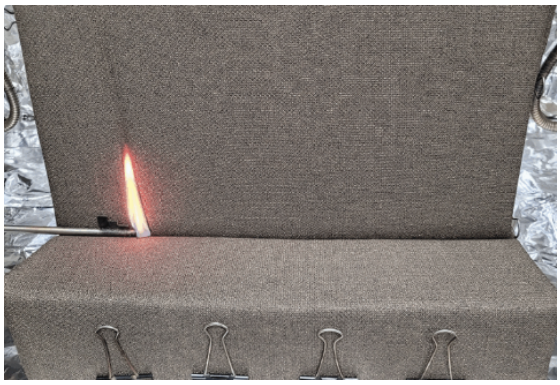
The standard distinguishes between two fundamentally different failure modes: progressive smouldering and flaming ignition. It also distinguishes between a simplified upholstery-composite test and a complete-item test, because the geometry and construction details of a finished chair or sofa can materially affect fire behaviour.

> **Important limitation: the standard assesses ignitability under specified laboratory conditions. It does not by itself provide a complete assessment of fire growth, heat release, smoke production, toxic gas evolution, ageing, washing or soiling effects.**

1.1 Main test routes

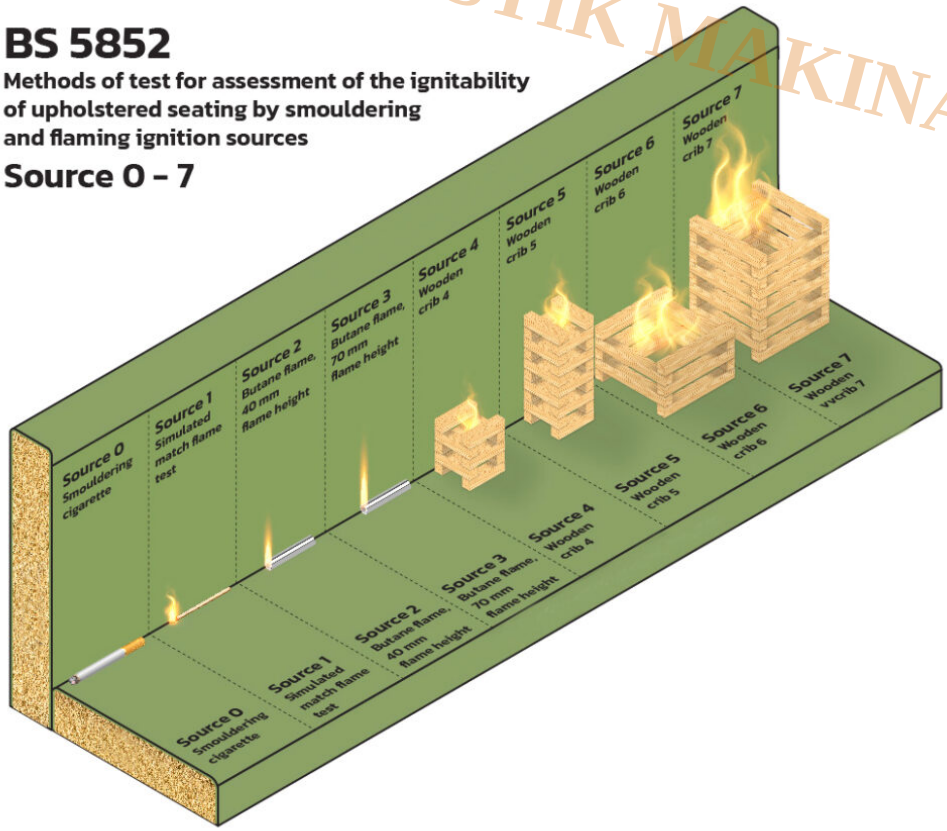
Route	Test object	Purpose
Section 4	Upholstery composite on a standardized 90Â° rig	Evaluate a defined cover / interliner / filling combination
Section 5	Complete item of seating furniture	Evaluate the finished design, including cushions, seams, gaps, overhangs and vulnerable locations

The document also directs attention to BS EN 1021-1 and BS EN 1021-2 for the cigarette and match-flame-equivalent tests and notes that BS 7176 applies ignition-resistance requirements to upholstered furniture in different hazard areas.



2. Ignition Sources: Source 0 to Source 7

The ignition sources are arranged in increasing severity. Source 0 is a smouldering cigarette. Sources 1, 2 and 3 use controlled butane flames. Sources 4, 5, 6 and 7 use flaming wooden cribs with increasing mass and thermal output.



2.1 Source 0 â€“ Smouldering cigarette

The source is an untipped cigarette. In the supplied 1990 edition the nominal requirements are 70 Â±4 mm in length, 8 Â±0.5 mm in diameter and 1 Â±0.1 g in mass. The smouldering rate is checked over a 50 mm distance and is required to be 12 Â±3 min. One cigarette from each batch of ten is used for this verification.

- Mark the cigarette at 5 mm and 55 mm from the end to be lit.
- Ignite it and draw air through it until the tip glows brightly; 5â€“8 mm is consumed during ignition.
- For the rate check, support the cigarette horizontally on a wire spike inserted no more than 13 mm into the unlit end.

2.2 Sources 1â€“3 â€“ Butane flames

Source	Gas flow at 25 Â°C	Gas burn time	Approx. free flame height
1	45 Â±2 mL/min	20 Â±1 s	35 mm
2	160 Â±5 mL/min	40 Â±1 s	145 mm
3	350 Â±10 mL/min	70 Â±1 s	240 mm

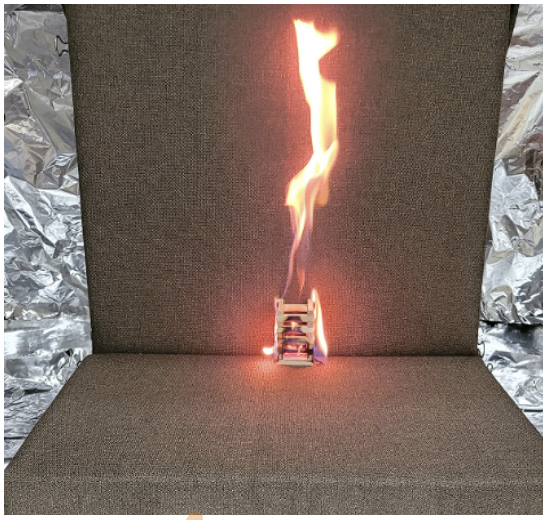
The burner tube is stainless steel, 200 Â±5 mm long, with an outside diameter of 8.0 Â±0.1 mm and an internal diameter of 6.5 Â±0.1 mm. It is supplied through a calibrated flowmeter, fine-control valve, optional on/off valve and a nominal 28 mbar regulator. The flexible tube between flowmeter and burner is 2.5â€“3.0 m long with an internal diameter of 7.0 Â±1.0 mm.

The standard emphasizes accurate gas-flow setting. It describes a soap-bubble flowmeter and calibrated glass tube (for example, a burette) as one way to verify the absolute gas flow at the burner tube.

3. Wooden Crib Ignition Sources 4â€“7

Sources 4â€“7 are wooden crib assemblies designed to provide progressively larger flaming ignition exposures and an additional mechanical load on the upholstery. They are not intended to reproduce

burning newspaper in every detail.



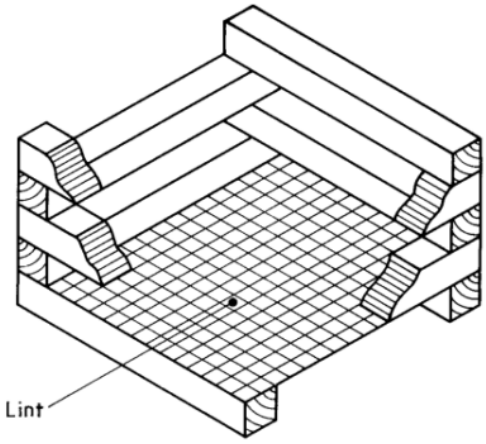


Figure 1 — Crib 4

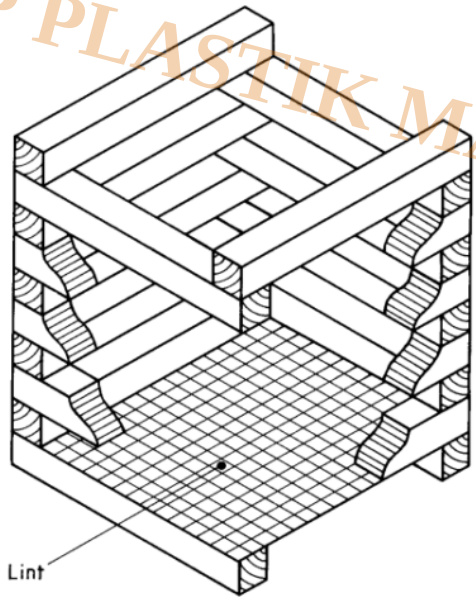
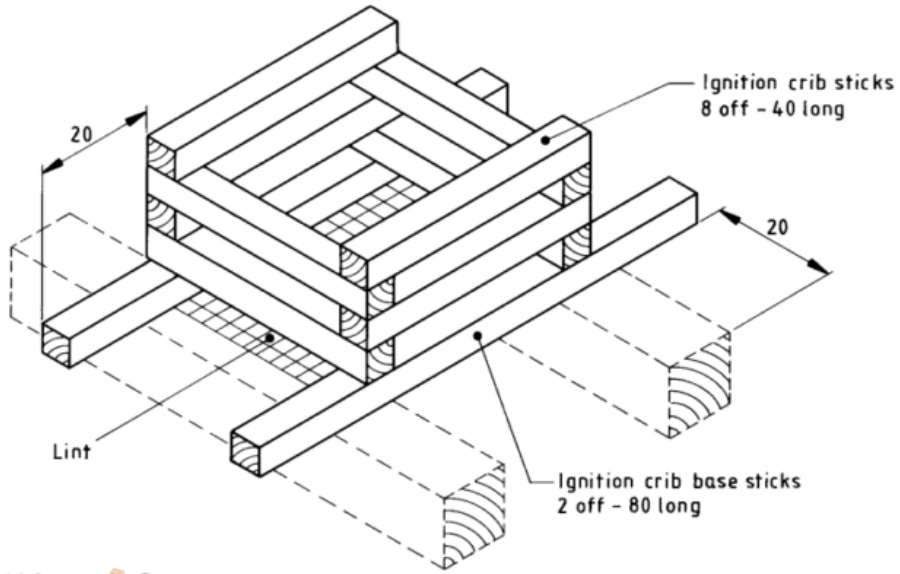
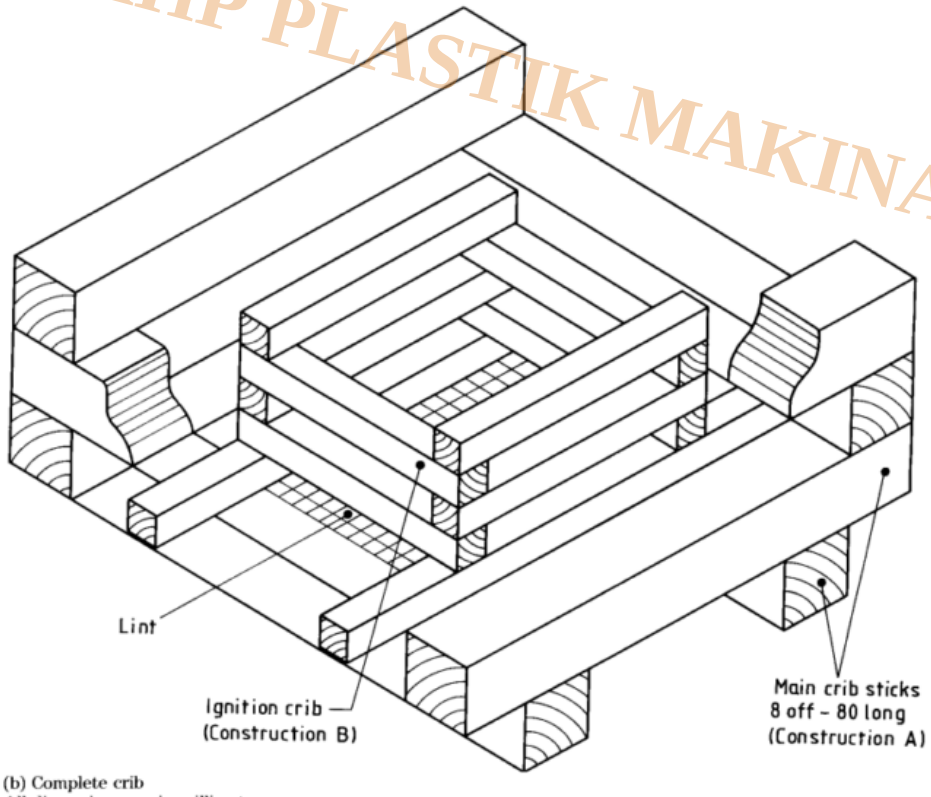


Figure 2 — Crib 5

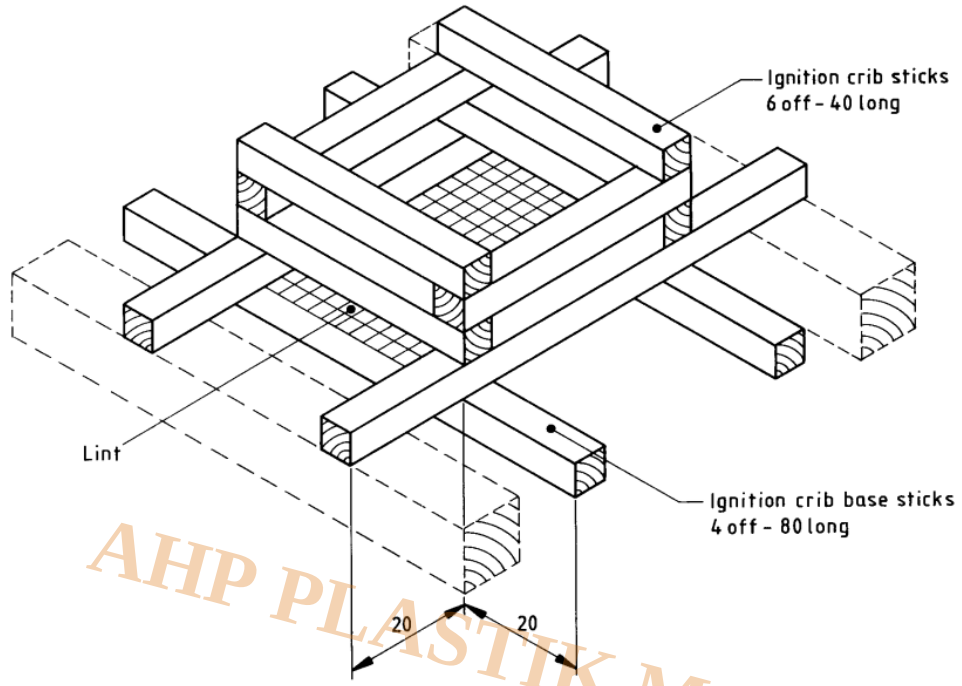


(a) Construction B
All dimensions are in millimetres.



(b) Complete crib
All dimensions are in millimetres.

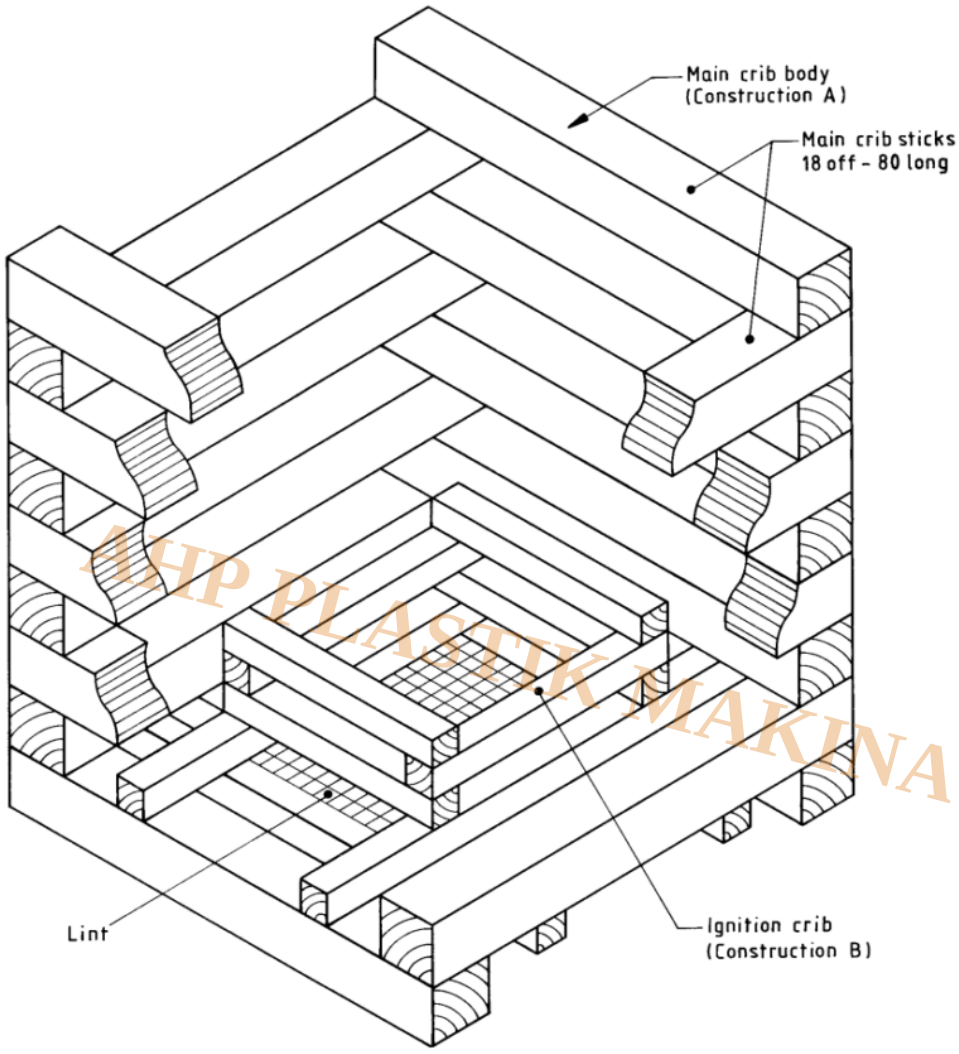
Figure 3 — Crib 6



All dimensions are in millimetres.

(a) Construction B

Figure 4 — Crib 7 (*continued*)



All dimensions are in millimetres.

(b) Complete crib

Figure 4 — Crib 7 (*concluded*)

3.1 Materials

- Dry softwood Pinus silvestris (Scots pine), stored under warm, dry conditions for at least one week before use.
- BPC-grade absorbent surgical lint, approximately 200 g/mÂ², cut into nominal 40 Ã— 40 mm squares with a mass of approximately 0.3 g per square.
- Polyvinyl acetate (PVA) or another suitable wood adhesive.

3.2 Crib parameters

Source	Principal stick section	Stick / assembly details	Total stick mass	Layers / form
4	6.5 Â±0.5 mm square; 40 Â±2 mm long	10 sticks	8.5 Â±0.5 g	5 layers, 2 sticks/layer
5	6.5 Â±0.5 mm square; 40 Â±2 mm long	20 sticks	17 Â±1 g	10 layers, 2 sticks/layer
6	Main: 12.5 Â±0.5 mm square; 80 Â±2 mm long	8 main + ignition crib sticks	60 Â±2 g	Main crib plus inner ignition crib
7	Main: 12.5 Â±0.5 mm square; 80 Â±2 mm long	18 main + ignition crib sticks	126 Â±4 g	Larger main crib plus inner ignition crib

For assembly, adjacent layers are oriented at right angles to each other. The lint is incorporated with the fluffy side uppermost when the crib stands on its base. The standard gives suggested hardwood formers of about 27 Ã— 27 Ã— 100 mm for Cribs 4 and 5 and the inner cribs of Sources 6 and 7, and about 55 Ã— 55 Ã— 150 mm for Cribs 6 and 7.

Immediately before a crib test, 1.4 Â±0.1 mL of propan-2-ol is added slowly to the centre of the lint. The alcohol is ignited within two minutes, and timing starts at ignition.

4. Conditioning and Test Environment

4.1 Conditioning

Test specimen materials are conditioned immediately before testing for 72 h in indoor ambient conditions and then for at least 16 h at 20 Â±5 Â°C and 50 Â±20% relative humidity. Cigarettes and wooden cribs are also conditioned as specified for their respective test methods.

4.2 Test atmosphere

Parameter	Requirement / guidance
Temperature	23 Â±7 Â°C
Relative humidity	45 Â±25% RH
Local air velocity in enclosure	0.02â€“0.2 m/s at the specimen position
Ventilation	Adequate oxygen without disturbing burning behaviour
Fume control	Smoke and toxic-gas extraction required

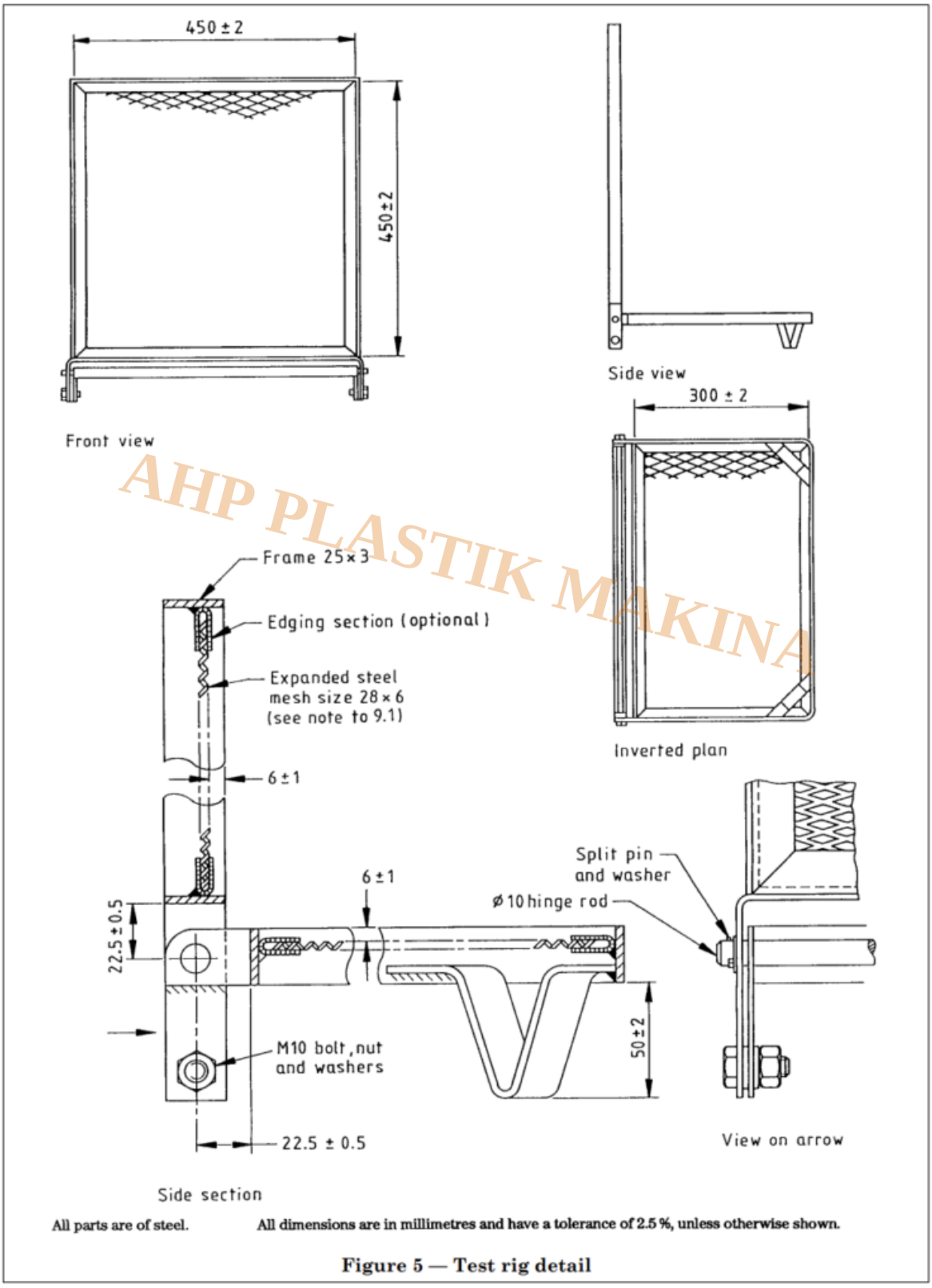
Testing must be carried out in a suitable fume cupboard or purpose-built room so that operators are not exposed to fumes. Suitable extinguishing means must be readily accessible.

5. Section 4 â€“ Upholstery Composite Testing

Section 4 evaluates the combined behaviour of cover material, interliner (if used) and filling. The standard deliberately models a horizontal/vertical junction because this is a critical geometry for accidental ignition of seating.

5.1 Test rig

- Two rectangular metal frames hinged together and capable of being locked at right angles.
- Vertical frame internal dimensions: 450 Â±2 mm width Ã— 450 Â±2 mm height.
- Horizontal base frame internal dimensions: 450 Â±2 mm width Ã— 300 Â±2 mm depth.
- Expanded steel supports the upholstery. A mesh around 28 Ã— 6 mm across the diagonals is identified as suitable, although the mesh size itself is not inherently critical unless another specification requires it.
- A stop clock accurate to 1 s and capable of measuring at least 1 h is required.



All parts are of steel. All dimensions are in millimetres and have a tolerance of 2.5 %, unless otherwise shown.

Figure 5 — Test rig detail

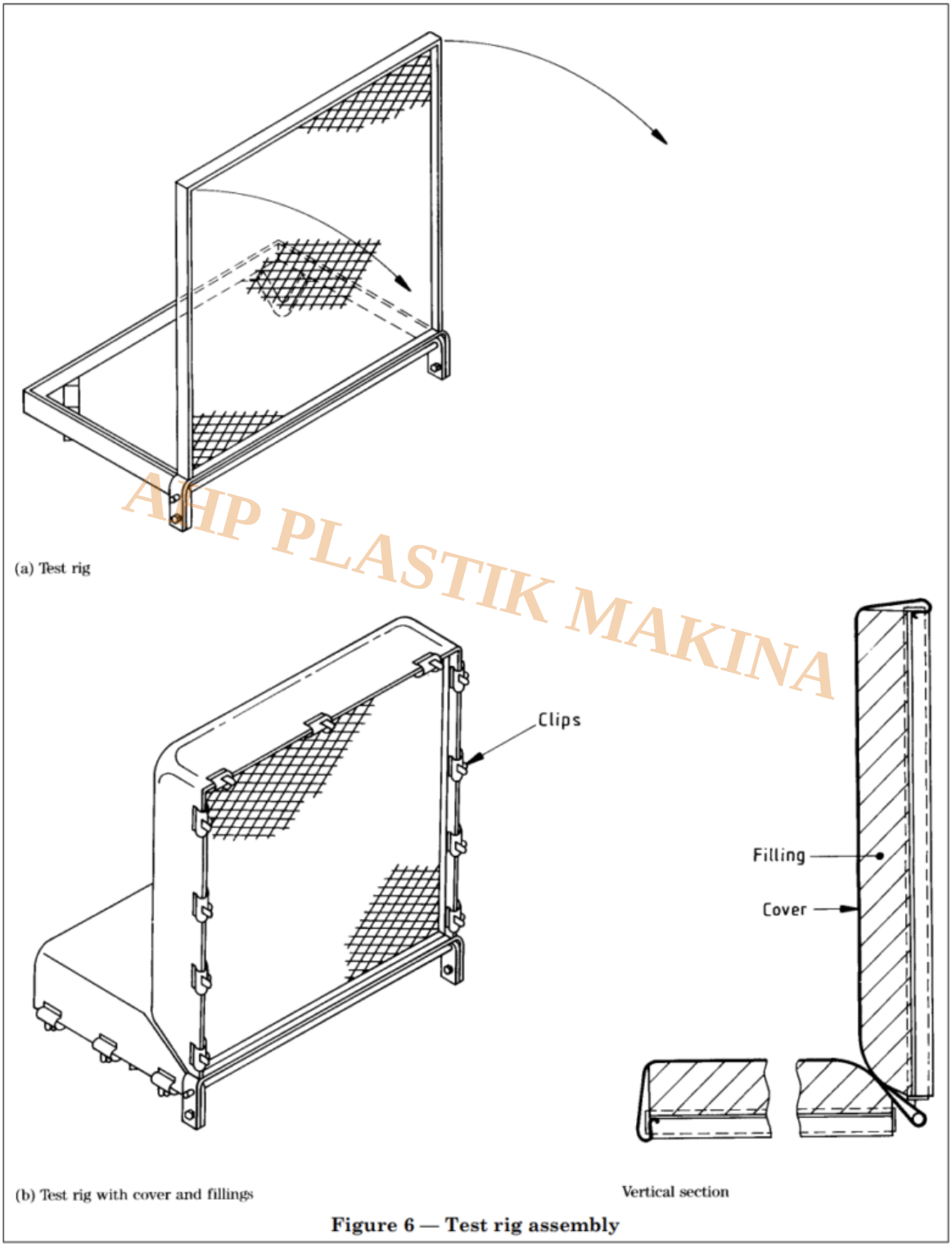
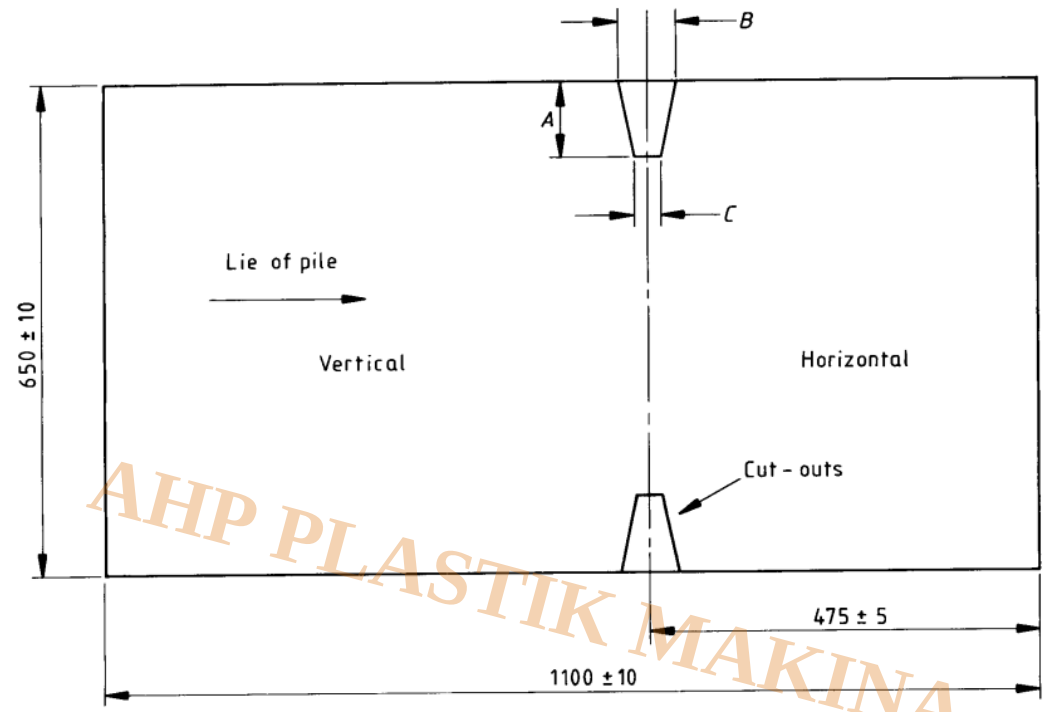


Figure 6 — Test rig assembly

5.2 Test specimen construction

The specimen represents a single upholstery combination and comprises a vertical and a horizontal component. The filling represents the upper 75 mm of the intended upholstery construction. If a finished item uses different cover/filling combinations in the seat, back or arms, each combination is tested

separately.



Approximate cut-out dimensions
A : 110
B : 50
C : 25

All dimensions are in millimetres.

Figure 7 — Details of test specimens for fabric covers and interliners for use with the test rig

Component	Dimensions	Notes
Vertical filling	450 Â±5 Ã— 450 Â±5 Ã— 75 Â±2 mm	Representative upper upholstery layers
Horizontal filling	450 Â±5 Ã— 300 Â±5 Ã— 75 Â±2 mm	Representative upper upholstery layers
Cover / interliner	Cut to Figure 7 pattern	Orientation and pile direction are controlled

6. Section 4 Test Procedures

6.1 Butane sources 2 and 3

1. Light the butane at the burner and set the specified flow rate.

2. Allow the flame to stabilize for at least 2 min.

3. Position the burner axially along the junction between the vertical and horizontal parts of the specimen, at least 50 mm from an edge or previous damage.

4. Apply the source for the specified time, then remove the burner.

5. Observe the cover and interior for flaming and progressive smouldering.

6. If no ignition is observed, repeat at a fresh position; if the final examination reveals progressive smouldering, record ignition.

6.2 Wooden crib sources 4â€“7

1. Use a new specimen for each test.

2. After conditioning the crib, add 1.4 Â±0.1 mL propan-2-ol to the centre of the lint.

3. Place the crib on the horizontal part, in contact with the vertical part and centrally between the sides of the rig.

4. Within 2 min, ignite the alcohol from the front and above the lint and start the clock simultaneously.

5. Observe for ignition in the cover and/or interior.

6. If no flaming or progressive smouldering is observed, repeat as specified. Perform a final internal examination of the filling.

> **If a crib collapses and scatters embers more than 100 mm from the edge of the crib, the test is repeated using a new crib and a new specimen.**

7. Section 5 â€“ Complete Item of Furniture

Section 5 evaluates an actual piece of seating furniture because design details can alter ignition performance in ways that cannot be represented by a simple composite test. The specimen is tested in its ready-for-use condition or, if different, its ready-for-sale condition, including loose covers, cushions and intended attachments.

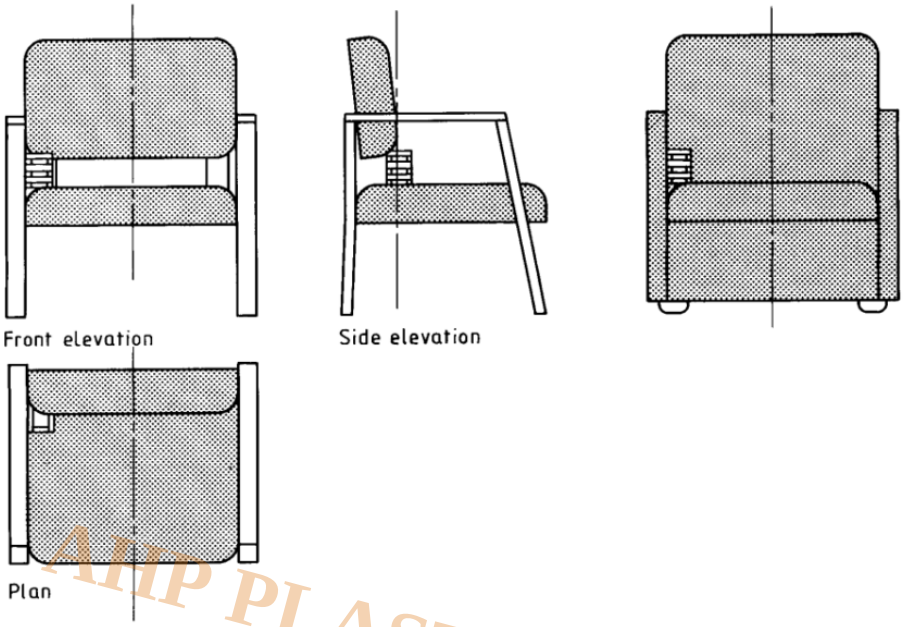


Figure 10 — Specified "ideal" model position for ignition source on seat

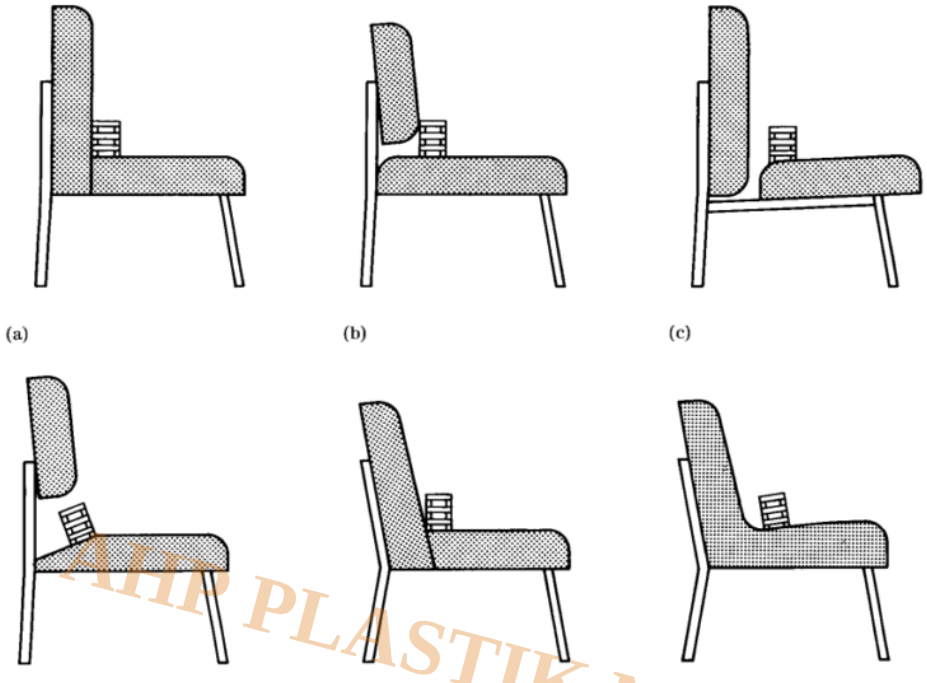


Figure 11 — Departures from "ideal" model position for ignition source on seat because of design variations

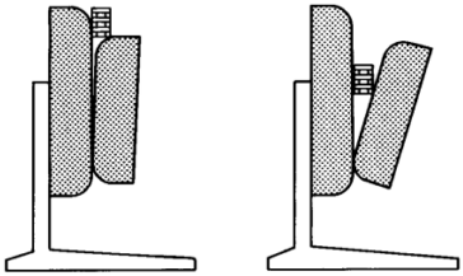
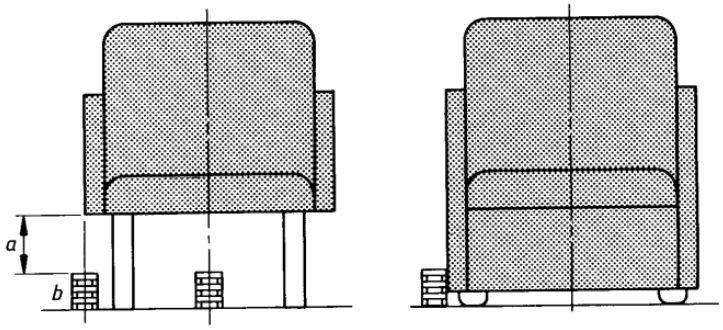


Figure 12 — Additional model positions of ignition sources for tip-up seats



Key

a = distance in Table 4 (for adjustable furniture only, see **20.4.2**)

b = centre of ignition source in line with specimen edge and positioned on floor

Figure 13 — Specified model positions for ignition source on floor

7.1 Selection of test zones

The tester selects the most vulnerable locations where an ignition source could reasonably rest. Where there is doubt, all potentially vulnerable positions are tested. The main categories are:

- Within the seating area, including grooves, recesses, seat/back junctions and seat/arm junctions.
- At floor level outside the seating area, adjacent to a vertical surface or beneath an overhang.
- At floor level underneath the specimen, where the clearance permits.

For complete-item testing, the test zone must be at least 0.5 m from the nearest enclosure wall. The enclosure and extinguishing system must be capable of dealing with the possibility of a fully developed furniture fire.

8. Complete-Item Source Application

8.1 Smouldering cigarette

The lighted cigarette is placed in the nominated zone without being pressed down. The specimen is observed for flaming or progressive smouldering. If no ignition is observed, or if the cigarette fails to smoulder its full length, a repeat is performed at a fresh position at least 50 mm from previous test damage.

8.2 Butane flame sources 1â€“3

The burner is set to the specified gas flow, allowed to stabilize for at least 2 min, then positioned horizontally at the nominated test zone. After the specified exposure time the burner is removed and the specimen is observed for ignition.

8.3 Wooden crib sources 4â€“7

A conditioned crib is dosed with 1.4 Â±0.1 mL propan-2-ol, positioned at the nominated test zone, ignited within two minutes and observed. Flames or afterglow that cease within 10 min for Cribs 4 and 5 or within 13 min for Cribs 6 and 7 are considered in conjunction with the defined ignition criteria. Observation for progressive smouldering may continue for up to 60 min.

9. Ignition and Failure Criteria

BS 5852 treats progressive smouldering and flaming ignition as separate modes. A specimen may therefore fail even if it does not continue to show an obvious external flame.

9.1 Progressive smouldering

- Escalating smouldering that makes the test unsafe and requires forced extinction.
- Smouldering that essentially consumes the specimen or reaches its extremities within the test duration.
- For crib sources, externally detectable smoke, heat or glowing 60 min after ignition of the crib.
- On final examination, charring within the filling more than 100 mm in any direction (other than upwards) from the nearest part of the original source position.

9.2 Flaming ignition

- Escalating flaming combustion requiring forced extinction.
- The specimen burns until essentially consumed, or a flame front reaches specified extremities / passes through the full thickness.
- Sources 2 and 3: flaming continues for more than 120 s after burner removal.
- Sources 4 and 5: flaming continues for more than 10 min after crib ignition.
- Sources 6 and 7: flaming continues for more than 13 min after crib ignition.

> **Final examination matters: the filling is dismantled and inspected because progressive smouldering can remain hidden inside the upholstery.**

10. Results and Test Report

In the 1990 edition, results are designated using â€œNIâ€• for non-ignition and â€œIâ€• for ignition, together with the relevant section and source number. For example, a composite passing Sources 2â€“6 but failing Source 7 is reported as Section 4 NI/2-6, I/7.

10.1 Information normally recorded

- Identification and construction of the test specimen, including any flame-retardant treatment.
- Conditioning and test conditions.
- Ignition source(s) applied and test position(s).
- Ignition / non-ignition result for each source.
- Details of ignition and notable burning behaviour, including melting, dripping, charring and development of flames from smouldering.
- Times of major events, such as ignition, cover splitting and extinction.

11. Safety Considerations

The standard warns that these tests involve considerable risk. The work should be carried out in a suitable fume cupboard or purpose-built room, with appropriate protective measures and ready access to extinguishing equipment.

Hazard / need	Standard guidance
Smouldering specimens	Water is preferred for extinguishing smouldering fires.
Flaming specimens	Provide a suitable fire extinguisher. COâ„‚ extinguishers are stated as unsuitable for extinguishing the test specimens themselves.
Residual smouldering	Specimens may need to be immersed in water or placed in a sealed non-combustible enclosure until completely inert.
Complete furniture	Plan for rapid fire development and a fully developed fire; the enclosure and extinguishing system must have sufficient capacity.

12. Practical Equipment Overview

Subsystem	Typical equipment	Used for
Test enclosure	Fire-resistant room/chamber, extraction, controlled air inlet, temperature/RH/air-velocity monitoring	All tests
Composite rig	90Â° hinged frames, expanded steel, fabric clips	Section 4
Gas ignition	Butane cylinder, 28 mbar regulator, fine valve, flowmeter, hose, stainless burner	Sources 1â€“3
Gas-flow verification	Soap-bubble flowmeter / calibrated glass tube or equivalent absolute flow check	Commissioning and periodic checks
Cigarette source	Specified untipped cigarettes, horizontal wire spike, timer	Source 0
Wood crib preparation	Scots pine, lint, PVA, crib formers/jigs, balance, dimensional gauges	Sources 4â€“7
Crib ignition	Propan-2-ol, graduated syringe capable of 1.4 Â±0.1 mL, ignition source	Sources 4â€“7

Safety	Water supply, suitable extinguisher, PPE, non-combustible disposal arrangement	All tests

13. Relationship with Other Standards

The supplied 1990 edition states that it is used in conjunction with BS EN 1021-1 and BS EN 1021-2 for cigarette and match-flame-equivalent testing. It also draws attention to BS 7176, which applies ignition-resistance requirements to upholstered furniture in different hazard areas.

Standard	Role	Relationship to BS 5852
BS EN 1021-1	Smouldering cigarette ignition test	Provides the cigarette-source method used alongside BS 5852
BS EN 1021-2	Match-flame-equivalent ignition test	Provides the low-level flaming-source method used alongside BS 5852
BS 7176	Performance specification for non-domestic upholstered seating	Uses test results / ignition-source levels to classify resistance appropriate to hazard categories

For design or conformity claims, use the current official editions of the relevant standards. This illustrated summary follows the supplied BS 5852:1990 document and should be treated as explanatory material only.

14. Key Takeaways

- BS 5852 evaluates the ignitability of upholstery using a graded sequence of smouldering and flaming ignition sources.
- Composite tests and complete-furniture tests serve different purposes and should not be treated as interchangeable.
- Accurate source construction, gas flow, timing, conditioning and source placement are critical to reproducible results.
- Wooden Cribs 4â€“7 provide increasing flaming severity and require tightly controlled timber dimensions, mass and conditioning.
- Progressive smouldering can be hidden inside the filling, so final dismantling and examination are essential.
- A full test facility requires not only the rig and ignition sources, but also a suitable fire-test enclosure, extraction, environmental monitoring and extinguishing capability.

Master BOM

Item No.	Component / Module	Qty.	Main Specification	Status	Reference

BS5852-001	Main Fire Test Chamber / Enclosure	1	Suitable fire-test enclosure or purpose-built room	Mandatory	Clause 4.1
BS5852-002	Smoke & Toxic Gas Extraction System	1	Capable of extracting combustion fumes and toxic gases	Mandatory	Clauses 9.4 / 18.3
BS5852-003	Controlled Air Inlet System	1	Air velocity at specimen: **0.02â€“0.2 m/s**	Mandatory	Clauses 9.4 / 18.3
BS5852-004	Fire-resistant Test Floor	1	Level, non-combustible test surface	Required for practical execution	Section 5
BS5852-005	Temperature Sensor / Thermometer	1	Suitable for monitoring **23 Â±7Â°C**	Required for compliance monitoring	Clause 9.4
BS5852-006	Relative Humidity Sensor	1	Suitable for monitoring **45 Â±25% RH**	Required for compliance monitoring	Clause 9.4
BS5852-007	Low-Velocity Air Meter	1	Measurement capability covering **0.02â€“0.2 m/s**	Required for compliance monitoring	Clause 9.4
BS5852-008	Test Timer / Stop Clock	1	Resolution **1 s**, capacity at least **1 h**	Mandatory	Clauses 9.2 / 18.1
BS5852-009	Emergency Extinguishing System	1 set	Water provision for smouldering fires + suitable extinguisher for flaming fires	Mandatory	Clause 4.2
BS5852-010	Heat-resistant Disposal Container	1	Non-combustible container for residual smouldering specimens	Recommended	Clause 4.2 guidance

Upholstery Composite Test Rig

Item No.	Component / Module	Qty.	Main Specification	Status
BS5852-020	Vertical Test Frame	1	Internal dimensions **450 Â±2 mm Ã— 450 Â±2 mm**	Mandatory
BS5852-021	Horizontal Test Frame	1	Internal dimensions **450 Â±2 mm Ã— 300 Â±2 mm**	Mandatory
BS5852-022	Expanded Steel Platform â€” Vertical	1	Expanded steel; approximately **28 × 6 mm mesh** suitable	Standard guidance
BS5852-023	Expanded Steel Platform â€” Horizontal	1	Same as above	Standard guidance
BS5852-024	Main Pivot / Hinge Assembly	1 set	Connects vertical and horizontal frames	Mandatory

Item No.	Component / Module	Qty.	Main Specification	Status
BS5852-025	90Â° Frame Locking Mechanism	2 sets	Locks rig securely at right angles	Mandatory
BS5852-026	Rear Support Legs	2	Supports vertical frame	Required by rig design
BS5852-027	Fabric Retaining Clips	Set	Maintain even fabric tension around frame	Required for test preparation
BS5852-028	Removable Hinge / Pivot Bar	1	Preferably removable for cleaning	Recommended
BS5852-029	Rig Base / Support Structure	1	Stable, heat-resistant construction	Recommended

Butane Ignition System â€” Sources 1, 2 and 3

Item No.	Component	Qty.	Specification	Status
BS5852-040	Butane Gas Cylinder	1	Suitable commercial butane supply	Mandatory
BS5852-041	Cylinder Pressure Regulator	1	Nominal outlet pressure **28 mbar**	Mandatory
BS5852-042	Gas On/Off Valve	1	Manual shut-off	Optional in standard, recommended
BS5852-043	Fine Control Valve	1	Fine adjustment of gas flow	Mandatory
BS5852-044	Butane Flowmeter	1	Must cover required source flow rates	Mandatory
BS5852-045	Flexible Gas Tubing	1	**2.5â€“3.0 m**, ID **7.0 Â±1.0 mm**	Mandatory
BS5852-046	Stainless Steel Burner Tube	1	OD **8.0 Â±0.1 mm**	Mandatory
BS5852-047	Burner Internal Bore	â€”	ID **6.5 Â±0.1 mm**	Mandatory
BS5852-048	Burner Tube Length	â€”	**200 Â±5 mm**	Mandatory
BS5852-049	Burner Positioning Fixture	1	Adjustable positioning holder	Recommended
BS5852-050	Quick Burner Retraction Mechanism	1	Rapid repeatable removal after flame duration	Recommended
BS5852-051	Gas Pressure Gauge	1	For regulator/output monitoring	Recommended
BS5852-052	Flame Shield / Pilot Igniter	1	Safe burner ignition	Recommended

The specified burner is a stainless-steel tube with OD **8.0 Â±0.1 mm**, ID **6.5 Â±0.1 mm**, length **200 Â±5 mm**, connected through a flowmeter, fine control valve and regulator to the butane source.

The system must be capable of producing the following nominal test conditions:

Source	Butane Flow at 25Â°C	Burn Time
Source 1	**45 Â±2 ml/min**	**20 Â±1 s**
Source 2	**160 Â±5 ml/min**	**40 Â±1 s**
Source 3	**350 Â±10 ml/min**	**70 Â±1 s**

Flowmeter Verification / Calibration Kit

Item No.	Component	Qty.	Specification	Status
BS5852-060	Soap Bubble Flowmeter	1	Suitable for absolute gas-flow verification	Standard suggested method
BS5852-061	Calibrated Glass Tube / Burette	1	Known calibrated volume	Suggested
BS5852-062	Short Calibration Hose	1	Approx. **7 mm ID**	Suggested
BS5852-063	Calibration Timer	1	Can share main timer	Suggested
BS5852-064	Bubble Solution Reservoir	1	Suitable soap-film generation arrangement	Recommended

This is a verification method suggested by the standard for checking the actual gas flow at the burner outlet.

Source 0 â€” Smouldering Cigarette Equipment

Item No.	Component	Qty.	Specification	Status
BS5852-070	Standard Untipped Cigarettes	Consumable	Length **70 Â±4 mm**	Mandatory source
BS5852-071	Cigarette Diameter	â€”	**8 Â±0.5 mm**	Mandatory characteristic
BS5852-072	Cigarette Mass	â€”	**1 Â±0.1 g**	Mandatory characteristic
BS5852-073	Horizontal Wire Spike Holder	1	Spike inserted max **13 mm** into unlit end	Required
BS5852-074	Cigarette Marking Gauge	1	Marks at **5 mm and 55 mm**	Recommended
BS5852-075	Cigarette Smouldering Timing Fixture	1	For 50 mm smouldering-rate check	Required

Item No.	Component	Qty.	Specification	Status
BS5852-076	Cigarette Ignition Device	1	Suitable lighter / flame source	Required

The specified cigarette has a nominal length of **70 Â±4 mm**, diameter **8 Â±0.5 mm**, mass **1 Â±0.1 g**, and a required smouldering rate of **12 Â±3 min over 50 mm**.

Wooden Crib System â€” Sources 4, 5, 6 and 7

Item No.	Component	Qty.	Specification	Status
BS5852-080	Scots Pine Timber	Consumable	**Pinus silvestris**, dry conditioned timber	Mandatory
BS5852-081	Surgical Absorbent Lint	Consumable	Approx. **200 g/mÂ²**	Mandatory
BS5852-082	Lint Cutter / Template	1	Nominal **40 Ã— 40 mm** squares	Recommended
BS5852-083	PVA Wood Adhesive	Consumable	PVA or suitable alternative	Mandatory
BS5852-084	Crib 4 Assembly Jig	1	Suitable for Source 4 geometry	Recommended
BS5852-085	Crib 5 Assembly Jig	1	Suitable for Source 5 geometry	Recommended
BS5852-086	Crib 6 Assembly Jig	1	Suitable for Source 6 geometry	Recommended
BS5852-087	Crib 7 Assembly Jig	1	Suitable for Source 7 geometry	Recommended
BS5852-088	Small Hardwood Former	1	Approx. **27 Ã—27 Ã—100 mm**	Standard suggested
BS5852-089	Large Hardwood Former	1	Approx. **55 Ã—55 Ã—150 mm**	Standard suggested
BS5852-090	Precision Balance	1	Suitable for sub-gram to ~150 g crib checks	Required in practice
BS5852-091	Vernier Caliper	1	For checking stick section and length	Required in practice
BS5852-092	Go / No-Go Gauge Set	1 set	For timber cross-section verification	Recommended
BS5852-093	Timber Cutting Jig / Saw	1	Repeatable crib stick cutting	Recommended

For crib construction, the standard specifies dry Scots pine, absorbent surgical lint approximately **200 g/mÂ²**, lint squares nominally **40 Ã—40 mm**, and PVA or another suitable wood adhesive.

The standard also suggests using a **27 Ã—27 Ã—100 mm** hardwood former for Cribs 4 and 5 and the inner cribs of 6 and 7, plus a **55 Ã—55 Ã—150 mm** former for Cribs 6 and 7.

Crib 4â€“7 Consumable Specifications

Source	Main Requirements
Crib 4	40 Â±2 mm sticks, 6.5 Â±0.5 mm square, 10 sticks, total **8.5 Â±0.5 g**
Crib 5	40 Â±2 mm sticks, 6.5 Â±0.5 mm square, 20 sticks, total **17 Â±1 g**
Crib 6	Main sticks 80 Â±2 mm, 12.5 Â±0.5 mm square; total crib mass **60 Â±2 g**
Crib 7	Main sticks 80 Â±2 mm, 12.5 Â±0.5 mm square; total crib mass **126 Â±4 g**

The exact numbers of main and ignition-crib sticks are defined in Tables 2 and 3 of the standard.

Crib Ignition / Liquid Dosing Equipment

Item No.	Component	Qty.	Specification	Status
BS5852-100	Propan-2-ol	Consumable	Test-grade suitable material	Mandatory
BS5852-101	Graduated Glass Syringe	1	Capable of measuring **1.4 Â±0.1 mL**	Mandatory
BS5852-102	Small Ignition Flame / Hot Wire	1	For ignition of alcohol-loaded lint	Required
BS5852-103	Propan-2-ol Storage Bottle	1	Suitable safety container	Recommended
BS5852-104	Dosing Stand	1	Repeatable controlled dosing	Recommended

The apparatus requirement explicitly includes propan-2-ol and a graduated syringe or equivalent instrument capable of measuring **1.4 Â±0.1 mL**.

Conditioning Equipment

Item No.	Component	Qty.	Specification	Status
BS5852-110	Conditioning Chamber / Room	1	**20 Â±5Â°C**, **50 Â±20% RH**	Required
BS5852-111	Conditioning Timer / Logger	1	Track conditioning duration	Recommended
BS5852-112	Temperature Data Logger	1	Conditioning verification	Recommended
BS5852-113	RH Data Logger	1	Conditioning verification	Recommended
BS5852-114	Sample Storage Racks	Set	Air circulation around samples	Recommended

Item No.	Component	Qty.	Specification	Status
BS5852-115	Crib Conditioning Tray	Set	Clean, dry storage for wooden cribs	Recommended
BS5852-116	Cigarette Conditioning Container	1	Suitable controlled storage	Recommended

Test materials must be conditioned for **72 h in indoor ambient conditions**, followed by at least **16 h at 20 Â±5Â°C and 50 Â±20% RH**.

Complete Furniture Test â€” Section 5 Accessories

Item No.	Component	Qty.	Specification	Status
BS5852-120	Furniture Test Platform	1	Flat surface representing floor level	Required
BS5852-121	Movable Specimen Positioning Platform	1	Suitable for chairs / sofas / seating units	Recommended
BS5852-122	Position Measurement Scale	1 set	For ignition-source positioning	Recommended
BS5852-123	0.5 m Clearance Marking System	1	Verify test-zone distance from chamber wall	Recommended
BS5852-124	Under-Furniture Burner Holder	1	Allows Source 1â€“3 positioning underneath specimen	Recommended
BS5852-125	Peripheral Ignition Holder	1	For floor-level side/front/rear ignition positions	Recommended
BS5852-126	Crib Positioning Tray / Locator	1	Stable crib placement	Recommended
BS5852-127	Adjustable Source Spacer Set	1 set	Useful for controlled source-to-specimen positioning	Recommended

For complete furniture tests, the enclosure must permit the test zone to be located at least **0.5 m from the nearest enclosure wall**, and the test source may be positioned in the seating area, at floor level beside the furniture, or underneath it.

Safety Equipment

Item No.	Component	Qty.	Status
BS5852-130	Water Supply / Hose	1	Required / preferred for smouldering
BS5852-131	Suitable Fire Extinguisher	1+	Mandatory
BS5852-132	Fire Blanket	1	Recommended
BS5852-133	Emergency Stop	1	Recommended
BS5852-134	Gas Solenoid Safety Valve	1	Recommended
BS5852-135	Gas Leak Detector	1	Recommended

Item No.	Component	Qty.	Status
BS5852-136	Combustible Gas Detector	1	Recommended
BS5852-137	High Temperature Alarm	1	Recommended
BS5852-138	Extraction Failure Interlock	1	Recommended
BS5852-139	PPE Set	Set	Depending on risk assessment
BS5852-140	Respiratory Protection	Set	Depending on installation/risk assessment

For complete furniture testing, the standard specifically warns that a fully developed fire can occur, so the enclosure and extinguishing arrangement must be capable of dealing with that situation.

Flame Test Chamber According to BS 5852 Clause 11, Ignition source 1, 2 & 3 | EN 1021-2

- Specimen type: Upholstered furniture
- Test standards: BS 5852 Clause 11, ignition source 1, 2 & 3EN 1021-2
- Gas type is Butane
- Combustion chamber
- Mechanical flow controller and burner
- Gas flow controller
- Hoses and burner
- Test rig according to figure 6
- Digital timer included
- To be provided by the customer
  Test room > 20 m^3
  Flue gas extraction system
  Gas balloon and pressure regulator for gas
- Manual needle valve for gas flow control
- Solenoid valve and flame protection is as option, operator need to be with machine during flame application period to check the flame

Category

1. Equipment for Standards
2. Standards

3. Uncategorized