

Output Specification

Technical Annex 3: Fittings, Furniture and Equipment

May 2020 Update

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Summary

This document is one of a number of Technical Annexes which form part of the Generic Design Brief (GDB).

Review date

The next planned review date for this document is November 2020.

Who is this publication for?

This document is for technical professionals involved in the design and construction of school premises, to use as part of the Employer's Requirements of the DfE Construction Framework. It may also be used as the basis of similar documentation for other procurement routes using the Output Specification.

Document Updates

- Version 9: Amendments to blinds and noticeboards.
- **Version 8:** May 2019 Revised to incorporate end user feedback, evidence collected and updates to applicable standards.
- Version 7: November 2017 Issued as OS 2017.
- **Versions 1-6:** July 2016 November 2017 Includes initial working towards OS 2017.

1. Introduction

- 1.1. This document is one of a number of Technical Annexes, which form part of the Generic Design Brief (GDB). It sets out the required standards and performance criteria for Fittings, Furniture and Equipment (FF&E) and should be read in conjunction with Section 3 of the GDB, as well as the School-specific Brief (SSB), including the School-specific Schedule of Accommodation and Area Data Sheets (SoA and ADS) and, where relevant, the Refurbishment Scope of Works (RSoW). The definitions in paragraph 1.3 of the GDB apply to this Technical Annex and all other parts of the OS.
- 1.2. The information exchange required at each stage of the procurement process is detailed in the Employer's Requirements Deliverables.
- 1.3. The requirements and specifications in this Technical Annex in respect of Buildings, FF&E and ICT Infrastructure shall apply to all parts of the Works in any New Buildings constructed by the Contractor, as well as to any Building Elements or Building Services, in any Refurbished Building(s), designated Renewed or Replaced in the RSoW. They shall not apply to Existing Buildings except for any part that is demolished or designated as a Refurbished Building or [specifically] described in the RSoW (for instance consequential work).
- 1.4. Where the requirements refer to an area, space or Suite of Spaces, this shall apply to all spaces in any New Building(s) or Remodelled Area. Any area or space within New Buildings or Remodelled Area shall conform to all relevant requirements in this Technical Annex.

2. General Requirements

2.1. FF&E Definitions

- 2.1.1. In this specification, FF&E comprises:
 - a) fittings, including worktops, sinks etc
 - b) fitted furniture, which is fitted to the fabric of the Building, including under-bench cupboards
 - c) fixed furniture and equipment (F&E) which is fixed to a structure for stability or rigidly serviced, including tall library shelving units or machinery
 - d) loose F&E which is a moveable item, including a chair or table.
- 2.1.2. FF&E does not include services such as electrical outlets, public address and alarm systems, passive ICT Infrastructure such as cabling, built-in air extraction systems, or sanitaryware including cubicle partitioning.

2.2. Definition of Responsibilities

- 2.2.1. Each item of FF&E will be in one of four groups which identify the responsibility for procurement, fixing and placing:
 - a) **Group 1**: FF&E supplied new and fitted by the Contractor, including all fittings and fitted furniture
 - b) **Group 2**: F&E, as identified in the School-specific SoA and ADS or SSB, provided by the School or others (from Legacy or purchased new), for which it is the responsibility of the Contractor to ensure it is working and safe when installed or fixed. When provided as Legacy, the Contractor shall re-use and upgrade as necessary or, where appropriate, replace with new items
 - c) **Group 3**: F&E provided by the School or others (generally loose, from Legacy or purchased new) which shall be moved and placed by the Contractor
 - d) **Group 4**: small items of loose equipment provided by the School or others, which shall be boxed by the School or others and moved by the Contractor.

2.3. Refurbishment

- 2.3.1. As described in the GDB, any work required to Refurbished Buildings shall be as defined in the RSoW, under the headings of architectural elements (including FF&E) and M&E elements (including ICT Infrastructure).
- 2.3.2. Unless specified otherwise in this Technical Annex, where a fitting or item of fitted furniture is required in the Refurbishment Scope of Works (RSoW), under the headings of architectural elements, it will be categorised as Renewed, Replaced, Repaired, Retained or have 'No work':
 - a) any **Renewed** FF&E shall be designed to satisfy the relevant outputs of the GDB as well as this Technical Annex (and by the code in the ADS where relevant)
 - b) any **Replaced** FF&E shall satisfy the relevant outputs of the GDB as well as this Technical Annex (and by the code in the ADS where relevant, as far as possible within the constraints of the location, the adjacent elements and the substructure
 - c) any **Repaired** FF&E shall comply with the specifications in any projectspecific drawing issued as part of the School-specific Brief, and the overall performance after repair shall be at least as good as that of the existing provision
 - d) any **Retained** FF&E shall be left as existing, with minimal work required unless needed in order to complete other Works that form part of the project, and the overall performance shall be no worse than the existing performance
 - e) any element requiring 'No work' shall be left as existing.
- 2.3.3. Subject to paragraphs 1.3 and 1.4 in this Technical Annex and Section 1.5 in the GDB, in respect of work to Refurbished Buildings, the required level of compliance with this Technical Annex is set out in the RSoW.
- 2.3.4. Generally, the requirements in this Technical Annex, refer to all parts of the Works except any building elements or services that are designated Repaired, Retained or 'no work in the RSoW, or spaces designated 'Untouched' in the School-specific SoA and ADS.

3. The FF&E Process

3.1. Overview

3.1.1. The process outlined in this Technical Annex are as set out in the Employer's Requirements Deliverables.

3.2. Room Layout Requirements

- 3.2.1. The Contractor shall initially produce notional FF&E layouts of key spaces, as listed in the Employer's Requirements Deliverables, showing the FF&E listed in the generic ADS, alongside co-ordinated elevations, views and FF&E schedules.
- 3.2.2. Where Legacy F&E is being provided by the School or others, the School, with the agreement of the Employer, will list on a pro forma (School-specific Annex 3: Legacy Equipment Schedule and Annex 4: Legacy F&E Schedule) all new or Legacy Group 2 and 3 items to be provided and where they are proposed to be placed.
- 3.2.3. During the pre-contract design process, all Group 1 and, where applicable, Group 2 items shall be shown on layouts for every space identified in the School-specific SoA and ADS. These items shall be listed on the Contractor's School-specific ADS. The layouts are to be approved by the Employer if the proposed FF&E is different from the generic items.
- 3.2.4. When the proposed area or shape of a space significantly differs from the dimensions and shape recommendations in the GDB and School-specific SoA and ADS, the Contractor shall illustrate an example layout showing all FF&E in that space, including the loose F&E items. This may be of particular relevance in the case of a Remodelled Area or Refurbished Building to show the compromises which may need to be made, to be approved by the Employer.
- 3.2.5. Where the Contractor is fixing or installing Group 2 Legacy F&E, all FF&E layouts shall address the following points:
 - a) legacy F&E (both internal and external) shall be located in accordance with the requirements in the SSB, the GDB as well as this Technical Annex
 - b) legacy F&E shall be integrated with any new FF&E provided by the Contractor
 - c) where Legacy F&E is additional to that listed in the generic ADS or does not match the size and dimensions of the items listed in the generic ADS, the

- Contractor shall produce a layout detailing the adjustments, with the agreement of the Employer.
- 3.2.6. Once agreed by the Employer, the list of Legacy or new items in Annex 3 and 4 schedules and the Group 1 items provided by the Contractor will form the basis of the final Contractor's FF&E layouts.

3.3. Purchasing and Delivery

- 3.3.1. The Contractor shall ensure the provision of Group 1 FF&E (and, where the Contractor is purchasing, other F&E) is in accordance with the required specifications as set out in this Technical Annex.
- 3.3.2. The Contractor shall ensure that delivery of Group 1 FF&E (and, where the Contractor is purchasing, other F&E) is not before the Building is ready to receive it.
- 3.3.3. The Contractor shall agree with the Employer the location that any new Group 3 F&E shall be delivered to, as defined in the SSB. The space(s) should be sufficiently large to store the items and to allow assembly of flat packed items.
- 3.3.4. The Contractor shall liaise with the Employer to ensure Legacy items are securely stored, unless the School has agreed to take responsibility for the serviceability and temporary storage of any item, as specified in the SSB. The Contractor shall be responsible for managing the programming and delivery of any additional items of Group 3 F&E to meet the project delivery programme.

3.4. Decant Strategy

- 3.4.1. The decant requirements are set out in the Employer's Requirements Deliverables. However, an overview of the requirements is given below:
 - a) the Contractor shall develop, and agree with the Employer, a decant process and programme. This should take into account any health and safety management plan applicable to the School and any requirements set out in the SSB
 - b) the Contractor shall develop and agree with the Employer, a detailed decant strategy programme plan that considers the co-ordination of FF&E, ICT and M&E provision. The Decant Strategy programme plan shall be agreed by the Employer at least six months prior to decant when the layout position of all FF&E is determined. The Contractor should nominate a named decant manager who shall actively manage the process and liaise with the Employer

- c) the Decant Strategy programme plan shall describe the Contractor's timings of deliveries up to and around Handover to allow co-ordination of on-site trades, FF&E installations, ICT networking, ICT equipment installation and testing
- d) the Contractor shall schedule sufficient time to assess the School's resource materials to be moved, and to carry out any necessary risk assessments involved with the removal of specialist items, e.g. chemicals in the science department
- e) boxes and crates shall be delivered to the School, as the Decant Strategy programme plan, including quantities, over an agreed number of weeks prior to the move. Particular consideration should be given to Group 4 items. A collection point for crates or boxes shall be agreed with the School, and the Contractor shall confirm how long crates can be kept following the move and the contra charges incurred after that time
- f) once packed, arrangements shall be made for the packed boxes/crates to be stored and labelled. The Contractor shall agree with the Employer and School whether some packed boxes/crates could be moved across to the new accommodation in advance of the move date and placed in the correct rooms, thus reducing the pressure on the move period
- g) the Contractor shall ensure that networking and power services are integrated closely with FF&E at decant, and the timing of availability needs to concur with system testing at handover. It should be possible for IT equipment to be placed on the relevant furniture before system testing.
- 3.4.2. The expectations being placed on the School shall be explicitly set out in the Decant Strategy programme plan. If additional days closure of the School is required or input required by the School over holiday periods, this shall be preagreed with the Employer and School.

4. Specialist Space FF&E Layout Requirements

4.1. Overview

4.1.1. The Contractor shall ensure and demonstrate that all layout requirements listed in the GDB, the SSB as well as this Technical Annex are met. Annex SS 3: 'School-specific Legacy Equipment Schedule' and Annex SS 4 'School-specific Legacy Furniture Schedule' should be referred to when identifying F&E which needs to be positioned and/or installed. A definition of the spaces outlined below are given in Annex 1A: 'Definition of Spaces - Mainstream Schools' and Annex 1B: 'Definition of Spaces - Special Schools and AP'.

4.2. Design & Technology workshops

- 4.2.1. There shall be sufficient space around any machine to allow safe use of the machine, and to prevent the operator from being accidentally pushed by passersby.
- 4.2.2. The space-allocation shown on Table 1 gives a guide to the working areas required around machines. These dimensions alone will not ensure safety, and consideration must be given to the size and layout of the workshop as a whole and the size of the actual Legacy machines.
- 4.2.3. The dimensions shown on Table 1 represent clear working space for each side of the machine. However, where machines are next to one another, the working space can overlap by 250mm for both machines. A 150mm space has been allowed at the back of the machine for cleaning and maintenance purposes, unless otherwise stated.
- 4.2.4. The front of machines are assumed to run alongside circulation routes, therefore distances in front of the machines are additional to the space needed for circulation the user shall not be positioned against a wall or fixed structure.
- 4.2.5. The dimensions around the preparation machines are assumed to overlap, as it is unlikely that more than one machine in the preparation area will be in use at any one time. All these machines should be securely and safely bolted to the floor.

Machine	Side 1 (to the left of the operator directly facing the machine) (mm)	Front (operator position) (mm)	Side 2 (mm)	Back (mm)
Bandsaw	1000	1500	300	1000
Brazing hearth²	750	1000	750	150
Chip forge ²	750	1000	750	150
Circular saw¹	2200	1250/2800 ³	1400	1650/2400
Crucible furnace	1000	1200	200	200
Drill ²	750	1000	750	150
Grinder	600	1000	600	150
Hacksaw ¹	2700	1000	1550	350
Horizontal grindstone	600	1000	600	150
Linisher ²	600	1000	600	150
Metal lathe	750	1000	600	400
Milling machine	750	1000	750	400
Moulding bench	50	1000	50	50
Planer/thicknesser	2400	1000	2300	350
Polisher ²	600	1000	600	150
Welding bench ²	750	1000	750	150
Woodlathe	1000	1000	600	350

Table 1: Workshop machinery

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¹Measurements to the blade

²machines which can share a 250mm overlap if placed side by side.

³larger dimension appplies if there is a cut-off table.

4.3. Food Rooms

- 4.3.1. Contractors shall allow adequate distances between furniture and equipment in food rooms to enable pupils and staff (including those in wheelchairs) to move around safely, particularly during practical sessions.
- 4.3.2. Table 2 shows recommended safe working area ranges around sinks and cookers in food-preparation areas. There can be an overlap of 250mm, if cookers and worktop runs are back-to-back (e.g. in a peninsular arrangement), resulting in a total clearance of 1750mm (1000mm+1000mm-250mm). It is assumed that the cooker and sink are set in a continuous work surface.

Food preparation area	Clear dimension (mm)
Space required in front of cooker	1000
Space between sink and cooker	750-1000
Space between 2 cookers	750-1050
Space between cooker and wall	450-750
Space between cooker and end of worktop run	600-750

Table 2: Food preparation

4.4. Science Laboratories

- 4.4.1. Contractors shall allow adequate distances between furniture and, in some cases equipment in laboratories to enable pupils and staff (including those in wheelchairs) to move around safely, particularly during practical sessions.
- 4.4.2. Table 3 shows recommended safe working area ranges around laboratory furniture and is based on the requirements of BS EN 14056: 2003: 'Laboratory furniture. Recommendations for design and installation' with additional dimensions given for space around doors etc.
- 4.4.3. The fume cupboard shall be positioned away from the fire exit or main circulation routes with clear access for groups of pupils possible during demonstrations. Fume cupboards shall be located away from benches, windows, walls and doors, as they can affect their performance, G9 'Fume Cupboards in Schools' 2014 CLEAPSS gives further information on the siting of fume cupboards.

Science laboratory tables	Clear dimension (mm)
Tables back to back ¹	1400-1650
Tables side to side (circulation route) 1	900-1050
Back of table to front to table ¹	750-1050
Back of table to wall or outer edge of door	850-1050
Back of tables to side of table ¹	1050-1400
Back of fume cupboard to wall (when in use)	1400
Side of fume cupboard to wall, column etc	300
¹ use upper limit where there is a run of more than 2 tables	N/A

Table 3: Science laboratory tables

4.5. Classrooms

4.5.1. There shall be adequate distances between furniture in classrooms to allow pupils and staff (including those in wheelchairs) to move around safely. Table 4 shows the recommended distance ranges.

General classroom tables	Clear dimension (mm)
Tables back to back ¹	1200-1350
Table side to side (circulation route)	1000-1200
Back of table to front to desk	750-1050
Back of table to wall ¹	850-1000
¹ use upper limit where there is a run of more than 2 tables or ICT benching	N/A

Table 4: General classroom tables

4.6. Locker areas

- 4.6.1. There shall be adequate distances between lockers to allow pupils and staff (including those in wheelchairs) to access their belongings and move around safely. Table 5 shows recommended ranges for safe circulation and access to lockers.
- 4.6.2. Lockers over 1400mm high should be fixed back to the wall for stability and safety.

- 4.6.3. The locking mechanism used will be listed in the SSB.
- 4.6.4. A sloping top shall be provided on banks of tall lockers to avoid items being placed and left on the top and, for ease of maintenance, to reduce dust and other debris.
- 4.6.5. To prevent rusting, lockers shall be placed off the floor surface if floors are mopped rather than vacuumed.

Recommendation	Dimension
	(mm)
Clear space in front of lockers	750
Distance between front of locker and wall	900-1050
Space between 2 sets of lockers (front to front), no main circulation between	1500-2000
Distance between lockers and changing bench	1200-1500

Table 5: Lockers

4.7. School Kitchen

4.7.1. Design Requirements

- 4.7.1.1. The size of the kitchen and the ancillary spaces (as given in the School-specific SoA and ADS) depends on the number of pupils having school meals and the type of meals cooked (as detailed in the SSB).
- 4.7.1.2. The kitchen should provide clearly identified zones of activity, which include:
 - a) sufficient 'dry' storage for raw materials
 - b) sufficient 'cold' storage
 - c) sufficient storage for frozen products
 - d) sufficient food preparation space
 - e) sufficient storage for equipment, utensils, crockery and cutlery
 - f) efficient and effective circulation space for staff to work in (see table6)
 - g) an area for checking in stock for receiving and unpacking of goods

- h) sufficient space for waste and recyclable materials
- i) separate storage for cleaning equipment and chemicals
- j) a WC and changing area with storage for clothing and personal belongings of staff
- k) a designated space for administrative work in schools with 210 pupils or more.

4.7.2. Planning

- 4.7.2.1. Kitchens should allow a continuous progression of activities, from delivery of goods through to preparation and serving of food through to washing up, with no crossover to avoid contamination. The kitchen shall therefore meet the following requirements:
 - a) an office is sited close to the loading area but within the preparation area to provide sight of all the activities
 - b) stores are near to the delivery and unloading area
 - c) there is sufficient separate storage of edible foodstuffs (i.e. fish to be kept separate from meat, dairy products to be kept separate from vegetables etc...)
 - d) the dry food store is in a cool area and not adjoining a boiler or plant room or kitchen appliances where there may be heat transfer through the walls and piping
 - e) the vegetable preparation area is near the delivery point, allowing only clean, prepared vegetables to enter the main preparation kitchen
 - f) there are sufficient work surfaces so that certain foods can be prepared on separate work surfaces (e.g. to prepare for special diets)
 - g) there are no acute corners or areas inaccessible to cleaners or cleaning machines
 - h) all equipment can be easily moved for cleaning (where applicable, all equipment should be on lockable castors with long enough gas

- hoses to allow equipment to be moved for easy cleaning and servicing)
- there are sufficient wash-hand basins (not set in worktops) to be placed at all entrances to the kitchen with soap dispensers, paper towel dispensers and covered waste bins (for paper towels)
- the main cooking equipment is located, wherever possible, in an island with sufficient worktop space adjacent to allow 'put-down' space
- k) processes such as frying etc, are grouped together, preferably in a central cooking suite rather than against a wall
- there is an allocated space for the disposal of waste food and washing dirty crockery near the entrance to the dining room
- m) there is direct access to the external waste food storage/treatment area (to prevent cross contamination).
- n) there is direct access from the dining areas to crockery wash without passing through the servery area
- o) the crockery wash area has a parking space for loaded trolleys.
- 4.7.2.2. The Contractor shall ensure that there are sufficient distances between catering equipment to allow staff to work safely and effectively. Table 6 shows recommended safe working area/area ranges in commercial kitchens.

Clearances	Clear dimension (mm)
Clearance in front of storage units and alongside circulation routes	1200
Front of cooking equipment to wall or door	1200
Front of servery units to wall/obstruction behind	1200
Between cooking equipment (facing each other)	1800-2000

Table 6: Clearances for catering kitchen

4.7.2.3. High efficiency kitchen equipment shall be used to achieve the good practice benchmarks for energy usage for schools given in CIBSE TM50 'Energy Efficiency in Commercial Kitchens', 2009.

5. Performance and Quality

5.1. Ergonomic Requirements

5.1.1. The Contractor shall ensure that correctly sized furniture is provided for the size and age of the pupil, as identified in the SSB, and the activities being carried out in each space. Inappropriately sized and designed furniture can affect the comfort and concentration of pupils and lead to accidents or back pain in later life.

5.2. Materials and construction

5.2.1. General Requirements

- 5.2.1.1. The Contractor shall ensure that certificates of compliance are made available to the Employer certifying that the furniture being supplied conforms to and has been tested to the appropriate standard(s) EN/EN/BS/ISO or recognised equivalents.
- 5.2.1.2. Contractors shall ensure compliance with ISO 9001:2015 and BS EN ISO 14001.
- 5.2.1.3. As required in the Employer's Requirements Deliverables, samples of items of furniture shall be made available to the Employer for approval.
- 5.2.1.4. Materials used in furniture supplied by the Contractor must be appropriate for the required activity and needs of the pupils as identified in the SSB and must also meet the relevant standards, as listed in the following sections.

5.2.2.Metal

- 5.2.2.1. Stainless steel shall be used in sinks and fabricated commercial kitchen furniture. 304 grade or 430 shall be used which is corrosion and heat resisting. Grade 430 shall be used for frames and legs of tables in commercial kitchens.
- 5.2.2.2. The Contractor shall provide stainless steel 316 grade acid resistant sinks in laboratories and science preparation rooms. Alternative materials for sinks shall be laboratory grade epoxy resin, polypropylene or acrylic.

- 5.2.2.3. Worktops shall be supported on steel leg frames constructed from square section fully welded tube at a minimum of 32mm square section or equivalent. The legs shall be fitted with adjustable levelling feet.
- 5.2.2.4. Metal coating on frames for fitted benching and tables shall be epoxy powder coated to the pre-agreed RAL colour and meet the requirements set out in BS 6496:1984: 'Specification for powder organic coatings for application'.
- 5.2.2.5. Where ICT is used, frames shall be capable of supporting cable management systems.
- 5.2.2.6. Lockers shall be manufactured using fully welded 16-gauge sheet steel for the carcass and 14-gauge sheet steel doors. Components shall be powder coated prior to assembly to ensure all surfaces are protected. Lockers placed in corridors shall meet the BS Class '0' fire rating.

5.2.3. Particle board

- 5.2.3.1. Medium density fibreboard (MDF) shall meet the requirements set out in:
 - a) BS EN 312:2010: 'Particleboards. Specifications' and BS EN 622-1 2003 'Fibreboards Specifications for MDF'
 - b) BS EN 622-5:2009: 'Fibreboards. Specifications. Requirements for dry process boards (MDF)'.
- 5.2.3.2. The Contractor shall provide MDF shelving in storerooms a minimum of 18mm thick.
- 5.2.3.3. Carcasses of storage units shall be manufactured from laminated MDF a minimum of 18mm thickness and edged in pressure applied PVC or an alternative material with the same attributes.

5.2.4. Timber

5.2.4.1. Timber shall be sound, well-conditioned, properly seasoned to suit internal joinery use, and free from defects. Timber must be purchased in accordance with the UK Government's timber procurement policy.

Only timber and timber products originating either from independently

- verified legal and sustainable sources or from a licensed Forest Law Enforcement Governance and Trade (FLEGT) partner can be used.
- 5.2.4.2. Where timber tops are used for worktops and tables, they should have a minimum thickness of 25mm.

5.2.5. Laminate and core material

- 5.2.5.1. All laminated worktops shall have high-pressure applied PVC edges or similar, finished flush and smooth with the core of the laminate concealed behind the lipping. If the core material is MDF, the edges shall be bull nosed, polished or lacquered MDF.
- 5.2.5.2. Laminate worktops shall be no less than 25mm thick and edged with an impact resistant, water resistant material.
- 5.2.5.3. Laminated table tops shall be no less than 18mm thick.
- 5.2.5.4. Vertical edges of doors and drawer fronts shall be post-formed or edged with high pressure applied PVC or similar.
- 5.2.5.5. Worktops used in food rooms shall be heat-resistant to 180°C.
- 5.2.5.6. Solid work surfaces shall be provided in D&T spaces, art rooms, science teaching spaces and science preparation spaces and shall be no less than 16mm thick.
- 5.2.5.7. Drainage grooves around sink areas shall be machined into the worktop material where solid grade laminate is used.
- 5.2.5.8. The tops of science pedestal units shall be firmly secured to the base unit with a minimum of 8 fixing points. This is to prevent the tops becoming loose from the base and the potential of the gas pipe fracturing.
- 5.2.5.9. Solid laminate may be used as locker doors, but if applicable, they shall be of a fire-resistant standard.
- 5.2.5.10. Laminates shall meet the requirements of BS EN 438-3:2016: 'High pressure decorative laminates (HPL)'.

5.2.6. Blinds and Curtains

- 5.2.6.1. All fabric used for blinds and curtains must be fire retardant. As a safety precaution cords and chains for blinds in schools must now be contained, particularly in Early Years where children aged up to 42 months are accommodated (see Section 8: References).
- 5.2.6.2. Blinds and curtains in halls and other spaces higher than 3.6m shall be remotely operated through a mains powered system or manually operated cranked rods.
- 5.2.6.3. Blinds in one in three science laboratories (or science studios) shall allow for black out for experiments, see Annex 2E 3.2.1.5.
- 5.2.6.4. Drapes shall form a proscenium arch at the front of the performance area in a hall. They shall comprise two sections with a 50-100% fullness suspended from a track, which are opened via a pulley system and closed from the centre to off-stage.

5.3. Defibrillators

5.3.1. At least one automated external defibrillator (AED) should be provided for all new and refurbished schools on centrally delivered programmes. The AEDs shall be purchased by the Contractor from the National Health Service (NHS) Supply Chain Framework as part of the FF&E budget. To ensure a response time of two minutes two or more AEDs may be needed in large Secondary Schools, with the second and subsequent AED housed in a cabinet.

6. Minimum Requirements of Fittings and Fitted Furniture and Equipment

6.1. The Contractor shall supply all Group 1 fittings and fitted furniture and equipment items required in Section 7, or listed in the SSB or the School-specific SoA and ADS, to the specifications in Table 7 below, as well as any additional FF&E listed in the SSB or the School-specific SoA and ADS.

Fittings ¹	Item	Nominal dimensions (mm)	Construction
BAR001	Barres	42-48mm diam. Var length	Solid timber. Steel brackets
BOA001	Noticeboard	1500x20x1500	Fabric covered. Unframed.
CHA401	Bleacher seating units (seats/benching with handrails)	Number of seats required	Powder coated mild steel. Rubber wheels. Wooden deck. Handheld control unit.
FFE912	Library desk	As ADS	Desk height suitable for wheelchair user. PVC edging. 40mm top laminated MDF core
FFE980	Reception desk (visitors)	To meet Building	Desk height suitable for
FFE981	Reception desk (pupils/finance)	Regs 2010: 'Access to and use of Buildings': Volume 2 Part M.	wheelchair user. PVC edging. 40mm top laminated MDF core.
FFE987	Curtains to shower cubicles	As ADS	Waterproof nylon. Rustproof fittings for rings.
LIG001	Lighting rig	Sufficient length for no. of LED lights required in SSB	Suitable for lighting load.
LIG004	Stage lanterns (LED)	As ADS	FR fabric. Corded tracking.
LIG002	Stage curtains		
LIG003	Stage curtain tracking		
FFE989	Blinds	As ADS	Contained cord mechanism. FR fabric for roller blind.
FFE990	Staging	As ADS	Demountable. Modular
MIR001	Full height mirror (music practise)	600x1800	Safety backed

Fittings ¹	Item	Nominal dimensions (mm)	Construction
SIN001	Belfast sink (large)	915x610x305	Enamelled fireclay, with silt trap
SIN002	Belfast sink (medium)	480x380x190	Enamelled fireclay
SIN003	Belfast sink (small)	430x330x190	Enamelled fireclay
SIN006	Belfast sink (cleaners)	455x380x355	Enamelled fireclay. Integral splashback. Hinged stainless steel grating
SIN004 SIN005	SS single sink (right/left hand drainer)	1000x500x170	Brushed SS. 18-gauge steel. Acid resistant grade 316 quality in science spaces
SIN007	Hand-wash sink	380x250x200	Grade 304 quality SS
SIN009	Screen-wash sink	1155x1140x1500	SS construction
WKTH60VS WKTH75VS WKTH12VS	Worktop 600/750/1200 deep (solid laminate)	600xvar hts 750xvar hts 1200xvar hts 1200xvar hts	Solid lam min 16mm thick with MDF core Min 16mm thick end panel
WKT600V WKT750V WKT120V	Worktop 600/750/1200 deep	600xvar hts750xvar hts 1200xvar hts	Lam min 25mm thick with MDF core Min 18mm thick end panel
Fitted furniture and equipment	Item	Nominal dimensions (mm)	Construction
APP011	Cooker Hob Electric (inset)	600x600	various
APP013	Oven (inset)	595x550x595	various
APP022	Mini oven	600x550x450	various
APP004	Wall mounted water boiler	various	various
BEN02	Single bench with integral hook rails	400mm length per pupil	Solid timber lacquered bench. Frame EPC
BOD01	Pupil serviced bollard (dry)	600x600x850	Solid lam top/edge. Top mounted 4 no. two way gas outlets, 4 no. twin gang 13-amp sockets, 2 no. data sockets. 1 no. access panel

Fitted furniture and equipment	Item	Nominal dimensions (mm)	Construction
BOWD01	Pupil serviced bollard (wet and dry)	600x600xvar	Solid lam top/edge Top/side mounted 4 no. two way gas outlets, 4 no. twin gang 13-amp sockets, 2 no. data sockets,1 no. cast epoxy sink, vulcathene waste and bottle trap. 1 no. single fixed swan neck tap. 1 no. access panel.
DEM01 or BOWD02	Teacher 'L' shaped serviced demo desk (wet and dry) or Teacher serviced bollard (wet and dry)	1800x1800x850 or 600x600xvar	Solid lam top/edge Top/side mounted 1 no. two way gas outlets, 2 no. twin gang 13-amp sockets, 1 no. data sockets,1 no. cast epoxy sink, vulcathene waste and bottle trap. 1 no. single fixed swan neck tap. 1 no. access panel.
BOW01	Whiteboard	1500x20x1500	Enamel. Non magnetic
CAR001	Carpet	3000x3000	Impervious, soft textured, heavy duty, tufted pile. Bound edges and anti-slip backing. Refer to Annex 2D
CHA024	Practical stool (science)	430x350xsizemark 5	Plastic shell with moulded seat. Minimal leg splay.
CUB009	Under bench cupboard (1 door)	415x465xvar ht	18mm MDF laminated carcass with ABS edging. Top 18mm thickness. 18mm doors with high
CUB004	Under bench cupboard (2 door)	415x1020xvar ht	pressure laminate ABS edging. 230° anti finger trap hinges.
CUB012	Under bench paper unit	1020x465xvar ht	18mm MDF laminated core with ABS edging
CUP014	Oven housing unit	600x600x550	18mm MDF laminated carcass with ABS edging min
CUP013	Wall cupboard unit (2 doors)	1020x300X720	MDF laminated core with ABS edging min 18mm thickness. Doors with high pressure laminate and ABS edging
EXT001 EXT002	Dust extraction unit (central) Dust extraction unit (local)	Refer to Annex 2F	Refer to Annex 2F
FFE932	Rebound screens	2400x30x1200	Scratch resistant laminate 0.9mm thick with high impact composite core and integral wheels

Fitted furniture and equipment	Item	Nominal dimensions (mm)	Construction
FUM01Ft	Fume cupboard (ducted)	1000x700x1850	Refer to CLEAPSS G9 Fume
FUM002Ft	Fume cupboard (semi-mobile, ducted)	1100x600x1950	Cupboards in Schools
LOC015	Locker (4 high)	300x300x1800	Steel/solid laminate with vents. Antibacterial coating. Double-skinned welded doors. Sloping tops.
RAC001	Tray racking (57)	1050x430x1830	Heavy-duty, fully-welded steel with cross brace, runners and 57 trays
SHE010	Stockroom shelving (set of 5) 380 Timber/metal frame	Var wdthx380x2000	Min 18mm timber/MDF adjustable shelves and metal frame
SHE020	Stockroom shelving (set of 5) 455 Timber/metal frame	Var wdthx455x2000	
SHE040	Stockroom shelving (set of 5) 600 Timber/metal frame	Var wdthx600x2000	
SHE030	Stockroom shelving (set of 5) 455 metal/ metal frame	Var wdthx455x2000	Reinforced metal adjustable shelves and metal frame
SHE100	Shelving (set of 3)	1200x300x900	Min 18mm timber/melamine with laminate/ABS edging. Wall mounted steel uprights/3 shelves/adjustable
STO001 STO002	Coat hooks (6/12)	750/1500x50	18mm timber/MFC panel, single row of double hooks at 130mm centres, safety design hooks
TAB001S	Adjustable table (practical)	1200x600xvar ht	Solid laminate top. Full weld. Simple adjustment mechanism.
TAB100S	Adjustable table (hob)	1200x750xvar ht	Solid lam top/edge
TAB101S	Adjustable table (sink)	1200x750xvar ht	
TAB200S	Practical table (science)	1200x600x850	Solid lam top. Metal frame. Solid construction.
TRU001	Under bench tray unit (24 trays)	1020x465xvar ht	MDF laminated core min 18mm thickness with 2mm ABS edging.
TRU002	Under bench tray unit (18 trays)		Shatter proof tray.
TRU004	Under bench tray unit (12 trays)		

Fitted furniture and equipment	Item	Nominal dimensions (mm)	Construction
TRU005	Under bench portfolio unit	1020x465x770	18mm MDF laminated carcass with ABS edging. Top 18mm thickness. 18mm doors with high pressure laminate ABS edging.
BED01	Bed, bedhead and mattress	825x1990xvar hts	Metal frame fully welded or 18mm thick MDF base with ABS lipping. Solid construction. Contract mattress.
BED02	Bedside cabinet	450x450x600	18mm MDF laminated carcass with 2mm ABS edging. 18mm door with high pressure laminate ABS edging. 25mm MDF laminated top with 3mm ABS edging
BED03	Study desk	900x600xvar hts	Solid lam top. Metal frame fully welded or 18mm thick MDF frame with ABS lipping. Solid construction.
BED04	Wardrobe (double with open shelves)	720x760x1720	18mm MDF laminated carcass with 2mm ABS edging. 18mm doors with high pressure laminate ABS edging. 230° anti finger trap hinges.

Table 7: Specification of Group 1 FF&E to be provided by the Contractor

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¹Codes for fittings and fitted furniture and equipment may be found on School-specific SoA and ADS.

7. Group 1 FF&E requirements for each space type

- 7.1. In any space provided, the Contractor shall provide all the Group 1 FF&E items listed for each room in the tables below, as well as any more specialised or additional School-specific FF&E listed in the School-specific SoA and ADS and the SSB. This will include, where relevant, FF&E for residential accommodation which is assumed to be Group 1. The specification of all Group 1 FF&E shall be as set out in Table 7.
- 7.2. For each teaching space, the Contractor shall provide a whiteboard (BOW01), see Table 7 above. Contractors shall also provide: 1 noticeboard (BOA001) for large spaces (halls, studios, social or dining areas), heavy practical spaces and arts & DT learning resources; 3 noticeboards for art rooms and 2 noticeboards for all other basic teaching spaces and occupied learning resource spaces.
- 7.3. For all staff and admin spaces, a noticeboard and set of shelves shall be provided for each workstation. A whiteboard and noticeboard are required for each preparation space and staff workroom.
- 7.4. In residential accommodation a noticeboard shall be provided for each bedroom occupant. Provision in living spaces should be determined with the School.
- 7.5. Noticeboards in all circulation spaces shall be fitted with a cover, preferably top hung. Noticeboards in rooms shall not extend more than 2.5m in width without having a break between them of at least 0.4m. The total area of noticeboards shall not exceed 20% of the total wall area in any one room (or 50% of the wall area if sprinklers are provided) or shall be no more than 60m2 in total in any one room. All noticeboards and display boards used in schools (except individual signs/notices required under the Health and Safety (Safety Signs and Signals) Regulations 1996, and small noticeboards/graphic displays up to 1m2), should be tested as a complete item to pass 'smouldering ignition source 0 (cigarette test)' and 'flaming source 1 (match test)' in accordance with the fire testing procedures in BS 5852 Clause 12: Methods of test for the ignitability of complete items of furniture.
- 7.6. Where side-benching is required, and unless otherwise stated, it shall run along the full length of a wall.
- 7.7. Where a sink is positioned at the end of a run of worktop there shall be a minimum of 100mm adjacent, to prevent items falling on the floor from the sink.
- 7.8. Adjustable height storeroom shelving shall be provided to the full length of 3 walls with shelf heights no greater than 1800mm. In an existing school, where storage

- systems are attached to the walls for stability these may be re-used, Contractors must be assured they are of an appropriate quality.
- 7.9. All furniture in science spaces and ICT-rich rooms shall be provided by the Contractor loose furniture is therefore listed in tables 7.3 and 7.4.
- 7.10. Where machines for D&T workshops are identified as Group 2, they shall be based on the existing provision listed in Annex SS 3 of the SSB. Legacy machines shall be installed or, if necessary repaired or replaced by the Contractor, depending on condition and safety. The basic condition of the machines will be recorded by the School on their School-specific Annex 3: 'Legacy Equipment Schedule'.

FF&E Fittings	Code	Item	Nursery 55m ²	Reception 62m ²	KS1&2 Classroom 55m ²	Studio 55m ²
N/A	SIN004	SS single bowl sink (RH drainer)	1	1	1	N/A
N/A	WKT600V	Worktop 600 deep	3.6m	7.2m	5.4m	7.2m
Fitted F&E	CUB004	Under bench 2 door cupboard	3	3	3	4
Fitted F&E	CUB013	Wall cupboard (2 doors)	2	2	2	N/A
Fitted F&E	SHE100	Shelving (set of 3)	2	2	1	4
Fitted F&E	CUB012	Under bench paper unit	1	1	1	N/A
Fitted F&E	TRU004	Under bench 18 tray unit	2	2	1	2

Table 7.1: Group 1 FF&E quantities to be provided by the Contractor in Primary classrooms and studio

FF&E category	Code	Item	Food bay/ practical resources 13m ²	Art/DT area 62m²	Food/ science/ DT area 62m ²
Fittings	SIN004	SS single bowl sink (right hand drainer)	1	1	2
Fittings	SIN001	Belfast sink (large)	N/A	1	1
Fittings	WKT60VS	Worktop 600 deep (solid laminate)	6m	18m	18m
Fitted F&E	CUB004	Under bench 2 door cupboard	3	7	7
Fitted F&E	CUB009	Under bench 1 door cupboard	2	N/A	5
Fitted F&E	SHE100	Shelving (set of 3)	N/A	5	7
Fitted F&E	CUB012	Under bench paper unit	N/A	1	1

Fitted F&E	TRU004	Under bench 18 tray unit	N/A	3	1
Fitted F&E	CUP014	Oven housing unit	1	N/A	2
Fitted F&E	STO002	Coat hooks (12)	N/A	N/A	1
Fitted F&E	APP011	Cooker hob electric (inset)	1	N/A	2
Fitted F&E	APP022	Mini oven (inset)	1	N/A	2

Table 7.2 Group 1 FF&E quantities to be provided by the Contractor in Primary specialist space

FF&E category	Code	Item	Quantity
Fittings	WKT12V	Worktop 1200 deep	7
Fittings	WKT600V	Worktop 600 deep	14
Loose F&E	CHA301	ICT staff chair	1
Loose F&E	TAB001S	Adjustable table (practical)	1
Loose F&E	TAB502	Table, ICT/Admin	1

Table 7.3: Group 1 FF&E quantities to be provided by the Contractor in ICT-rich space

FF&E category	Code	Item	Science studio 69m²	General laboratory 83m²	Specialist laboratory 90m ²
Fittings	SIN002	Belfast sink (medium)	1	1	1
Fittings	SIN003	Belfast sink (small)	1	2	2
Fittings	WKT60VS	Worktop 600 deep (solid lam)	9m	11m	12m
Fitted F&E	DEM01	Teacher serviced demo desk	1	1	1
Fitted F&E	BOD01	Pupil serviced bollard (dry)	N/A	5	N/A
Fitted F&E	BOWD01	Pupil serviced bollard (wet and dry)	N/A N/A		5
Fitted F&E	SHE100	Shelving (set of 3)	6	N/A	N/A
Fitted F&E	CUB004	Under bench unit (2 door)	6	9	10
Fitted F&E	FUM002Ft	Fume cupboard (semi-mobile, ducted)	1 in 3 spaces	1 in 3 spaces	1 in 3 spaces
N/A	STO05X	Coats and bags unit	N/A	N/A	2
Loose F&E	TAB001S	Adjustable table (practical)	1 in 3 spaces ¹	1 in 3 spaces ¹	1 in 3 spaces ¹
Loose F&E	TAB200S	Practical table (science)	15	15	15
Loose F&E	CHA024	Practical stool (science)	31	31	31

F&E NACOUT Tray facking (37)	Loose F&F	RAC001	Tray racking (57)	2	2	2
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Table 7.4: Group 1 FF&E quantities to be provided by the Contractor in science teaching spaces

¹Contractor to identify which 1 in 3 science laboratories or studios to have fume cupboards and adjustable tables

FF&E Category	Code	Item	Art room 90m ²	3D Art (ceramics) 103m ²	3D Art (textiles) 103m ²
Fittings	SIN001	Belfast sink (large)	2	2	2
Fittings	SIN009	Screen wash sink	N/A	N/A	1
Fittings	WKT60VS	Worktop 600 deep (solid laminate)	18m	18m	20m
Fitted F&E	CUB004	Under bench 2 door cupboard	4	5	5
Fitted F&E	SHE100	Shelving (set of 3)	6	5	4
Fitted F&E	TRU100	Under bench 24 tray unit	2	2	2
Fitted F&E	TRU005	Under bench portfolio unit	2	2	2

Table 7.5: Group 1 FF&E quantities to be provided by the Contractor in art spaces

FF&E Category	Code	Item	Workshop 104m ²	Graphics 83m ²	Textiles 83m ²	Electronics 83m ²
Fittings	SIN004	SS single bowl sink (right hand drainer)	1	1	1	1
Fittings	WKT60VS	Worktop 600 deep (solid laminate)	8m	5m	8m	14m
Fittings	WKT75VS	Worktop 750 deep (solid laminate)	N/A	7m	N/A	N/A
Fittings	WKT12VS	Worktop 1200 deep (solid laminate)	N/A	6m	N/A	6m
Fitted F&E	CUB004	Under bench 2 door cupboard	5	3	3	6
Fitted F&E	SHE100	Shelving (set of 3)	2	4	6	4

Fitted F&E	TRU100	Under bench 24 tray unit	1	1	3	1
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Table 7.6: Group 1 FF&E quantities to be provided by the Contractor in D&T spaces

FF&E Category	Code	Item	Food room 104m2	Food studio 69m2
Fittings	SIN004	SS single bowl sink (right hand drainer)	6	1
Fittings	SIN005	SS single bowl sink (left hand drainer)	6	N/A
Fittings	SIN007	Hand wash basin	1	1
Fittings	WKT12V	Worktop 1200 deep	7.2m	N/A
Fittings	WKT600V	Worktop 600 deep	37m	14.5m
Fitted F&E	CUB004	Under bench 2 door cupboard	13	8
Fitted F&E	CUB009	Under bench 1 door cupboard	22	N/A
Fitted F&E	CUP014	Oven housing unit	1	1
Fitted F&E	SHE100	Shelving (set of 3)	3	4
Fitted F&E	TAB100	Practical adjustable table (hob)	1	N/A
Fitted F&E	TAB101	Practical adjustable table (sink)	1	N/A
Fitted F&E	APP011	Cooker hob (electric inset)	1	1
Fitted F&E	APP0013	Oven (inset)	1	1

Table 7.7: Group 1 FF&E quantities to be provided by the Contractor in Food spaces

FF&E Category	Code	Item Science prep 62m ²		Food prep 10m²	DT prep 34m²
Fittings	SIN004	SS single bowl sink (right hand drainer)	N/A	1	1
Fittings	SIN002	Belfast sink (medium)	2	N/A	N/A
Fittings	WKT60VS	Worktop 600 deep (solid lam)	9.5m	N/A	3.5m
Fittings	WKT600V	Worktop 600 deep	N/A	2.5m ¹	N/A
Fittings	WKT75V	Worktop 750 deep	N/A	N/A	N/A
Fittings	WKT12VS	Worktop 1200 deep (solid lam)	2.4m ¹	N/A	N/A
Fitted F&E	CUB001	Under bench 2 door cupboard	5 ¹	1	3
Fitted F&E	SHE100	Shelving (set of 3)	1	2	1

Fitted F&E	STO001	Coat hooks (6)	1	1	1
Fitted F&E	EXT001	Dust extraction unit	N/A	N/A	1
Fitted F&E	FUM001Ft	Fume cupboard (ducted)	1	N/A	N/A

Table 7.8: Group 1 FF&E quantities to be provided by the Contractor in Preparation spaces

FF&E category	Code	Item	LRC 180m ²	Control room 8m ²	Dark room 9m²
Fittings	SIN001	Belfast sink (large) N/A		N/A	1
Fittings	WKT60VS	Worktop 600 deep (solid lam) N/A		N/A	4m²
Fittings	WKT600V	Worktop 600 deep 13m ²		4m²	N/A
Fittings	FFE912	Library desk	1	N/A	N/A
Fittings	SHE100	Shelving (set of 3) 1		2	2
Fittings	TRU100	Under bench 24 Tray unit	N/A	N/A	1

Table 7.9: Group 1 FF&E to be provided by the Contractor in Resource spaces

FF&E category	Code	Item	Quantity (per person)
Fitted F&E	BED01	Bed, bedhead and mattress	1
Fitted F&E	BED02	Bedside cabinet	1
Fitted F&E	BED03	Study desk	1
Fitted F&E	BED04	Wardrobe (double with open shelves)	1

Table 7.10: Group 1 FF&E to be provided by the Contractor in Residential Accommodation in a mainstream school

¹A formula within the ADS will generate the amount of worktop and cupboards based on the area in the SoA

²A formula within the ADS will generate the amount of worktop and shelving units based on the number of pupils.

8. Reference Standards

8.1. Reference Standards

8.1.1. The contractor shall ensure that the design installation, handover, documentation and commissioning of the fittings, furniture and equipment provided shall comply with all relevant Employer's Requirements, as well as the following (or updated documents if relevant).

8.2. Upholstery

- a) BS EN 16139:2013: 'Furniture. Strength, durability and safety. Requirements for non-domestic seating'
- b) BS 7176:2007+A1:2011: 'Specification for resistance to ignition of upholstered furniture for non-domestic seating by testing composites'
- c) BS 7177:2008+A1:2011: 'Specification for resistance to ignition of mattresses, mattress pads, divans and bed bases'
- d) BS EN 597:1:2015: 'Furniture. Assessment of the ignitability of mattresses and upholstered bed bases. Ignition source smouldering cigarette 'Chairs and Tables'
- e) BS EN 1729-1:2012+A1:2015: 'Furniture. Chairs and tables for educational institutions. Functional dimensions'
- f) BS EN 1729-2:2012+A1:2015: 'Furniture. Chairs and tables for educational institutions. Safety requirements and test methods'.

8.3. Storage

- a) BS 5873-5:1998: 'Educational furniture. Specification for security of fixed secure storage furniture for educational institutions'
- b) BS 5873-4:1998: 'Educational furniture. Specification for strength and stability of storage furniture for educational institutions'
- c) BS EN 14749: 'Furniture. Domestic and kitchen storage units and kitchen-worktops. Safety requirements and test methods'
- d) BS 4680:1996: 'Specification for clothes lockers'

- e) BS EN 14073-2: 2004: 'Office furniture. Storage furniture. Safety requirements'
- f) BS EN 14073-3:2004: 'Office furniture. Storage furniture. Test methods for the determination 'of stability and strength of the structure'
- g) BS 6222-3:1999: Domestic kitchen equipment. Performance requirements for durability of surface finish and adhesion of surfacing and edging materials. Specification'.

8.4. Sinks

- a) BS EN 13310:2015: 'Kitchen sinks. Functional requirements and test methods'
- b) BS 1206:1974: 'Specification for fireclay sinks: dimensions and workmanship'.

8.5. Laboratories

- a) BS EN 14056:2003: 'Laboratory furniture. Recommendations for design and installation'
- b) BS EN 13150: 2001: 'Workbenches for laboratories. Dimensions, safety requirements and test methods'
- c) BS EN 14175-2:2003: 'Fume cupboards. Safety and performance requirements'
- d) G9 'Fume Cupboards in Schools' 2014. CLEAPSS.

8.6. Retractable bleacher seating

- a) NFPA 102 National Fire Protection Association. Standard for Grandstands,
 Folding and Telescopic Seating, Tents, and Membrane Structures Effective Date: 2015
- b) BS EN 13200- Parts 1-5: 2012: 'Spectator facilities. General characteristics for spectator viewing area'
- c) BS EN 12727:2000: 'Furniture. Ranked seating. Test methods and requirements for strength and durability Test Level 4, Severe Category Use'.

8.7. Curtains and blinds

- a) BS 5867: Part 2: 2008: 'Fabrics for curtains, drapes and window blinds. Flammability requirements. Specification'
- b) EN13120:2009+A1:2014: 'Internal blinds. Performance requirements including safety.'

8.8. Equipment

- a) BS EN 14434:2010: 'Writing boards for educational institutions. Ergonomic, technical and safety requirements and their test methods'
- b) BS 5852 Clause 12: Methods of test for the ignitability of complete items of furniture. Noticeboards
- c) BS EN 1176-11:2014: 'Playground Equipment Standard parts 1-11'.d.BS EN 12346:1999: 'Gymnastic equipment. Wall bars, lattice ladders and climbing frames. Safety requirements and test methods'
- d) BS EN 1270: 2005: 'Playing field equipment Basketball equipment Functional and safety requirements, test methods'.



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