



Department
for Education

Further education output specification

**Technical annex 3: fittings, furniture and
equipment**

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Contents

Summary	4
Who is this publication for?	4
Uniclass codes	4
Revision history	5
1 Introduction	6
1.1 Overview	6
2 General Requirements	7
2.1 FF&E Definitions	7
2.2 Definition Groups and Responsibilities	7
2.3 Refurbishment	8
3 The FF&E Process	9
3.1 Overview	9
3.2 Room Layouts	9
3.3 Purchasing and Delivery	10
3.4 FF&E Decant Protocol	10
4 Specialist Space FF&E Layout Requirements	12
4.1 Overview	12
4.2 Vocational workshops	12
4.3 Commercial Catering Environment	13
4.3.1 Design Requirements	13
4.3.2 Planning	13
4.3.3 Commercial Sub-Let Catering Environment	15
4.4 Science Environment	15
4.5 Classrooms and seminar spaces	16
4.6 Locker areas	17
5 Performance and Quality	18
5.1 Ergonomic Requirements	18
5.2 Materials and construction	18
5.2.1 General Requirements	18
5.2.2 Metal	19
5.2.3 Manufactured board	19

5.2.4 Timber	19
5.2.5 Laminate and core material	20
5.2.6 Upholstered materials	21
5.2.7 Blinds and curtains	21
5.2.8 Defibrillators	21
6 Minimum Requirements of Fittings, Fitted Furniture and Equipment	23
6.1 Overview	23
7 Group 1 FF&E - specific requirements for each space type	24
7.1 Overview	24
8 Demonstrating Compliance	26
8.1 Overview	26
9 Reference Standards	27
9.1 Overview	27
9.2 Chairs and Tables	27
9.3 Upholstery	27
9.4 Storage	27
9.5 Sinks	28
9.6 Laboratories	28
9.7 Retractable bleacher seating	28
9.8 Blinds and curtains	29
9.9 Equipment	29

Summary

Technical Annex 3 provides the minimum requirements for fittings, furniture and equipment. It is to be read in conjunction with the Generic Design Brief (GDB) and the College-specific Brief (CSB).

Who is this publication for?

This document is for technical professionals involved in the design and construction of college premises, as part of the Employer's Requirements of the DfE Construction Frameworks (the DfE Construction Framework 2021 and the Offsite Schools Framework (incorporating Modular and MMC delivery) (MMC)). It may also be used as the basis of similar documentation for other procurement routes using the Further Education Output Specification.

Uniclass codes

This document captures Uniclass codes for the management of exchange of information. To access all codes and associated titles reference should be made to [Uniclass 2015 | NBS \(thenbs.com\)](#).

Revision history

This table lists the key changes in each update.

ISO revision code	ISO status code	Date	Amendment
C01	A	2021-11-09	Initial publication
C02	A	2022-11-25	Title corrected on front page. Amendments made at: 3.2.2, 4.3.2.5, 5.2.8
C03	A	2023-12-18	Amendments made at: 4.6.4, 7.1.10, 7.1.11

1 Introduction

1.1 Overview

1.1.1 This document is one of the Further Education Output Specification (FE-OS) Technical Annexes that forms part of the Generic Design Brief (GDB). [PM_10_20]

1.1.2 The definitions listed in the GDB shall apply to this Technical Annex and all other parts of the FE-OS. [PM_10_20]

1.1.3 This document shall be read in conjunction with the GDB and all other Technical Annexes as well as the College-specific Brief (CSB), including the College-specific Annexes. [PM_10_20]

1.1.4 This document sets out the required technical standards and performance criteria for Fittings, Furniture and Equipment (FF&E). [PM_10_20]

1.1.5 The information exchange required at each stage of the design, build and completion process is detailed in the DFE's Exchange Information Requirements (EIR). [PM_10_20_28]

1.1.6 The requirements in this Technical Annex shall apply to all parts of the works; New or Refurbished. [PM_10_20]

1.1.7 This document sets out the required minimum standards to ensure inclusivity and accessibility with fitted and loose furniture provisions. [PM_10_20]

2 General Requirements

2.1 FF&E Definitions

2.1.1 In this specification, FF&E comprises:

- a) fittings, including worktops, sinks etc [EF_40]
- b) fitted furniture, which is fitted to the fabric of the Building, including under-bench cupboards and noticeboards [EF_40]
- c) fixed furniture and equipment (F&E) which is fixed to a structure for stability or rigidly serviced, including tall library shelving units or workshop machinery [EF_40]
- d) loose F&E which is a moveable item, including a chair or table. [EF_40]

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. [PM_10]

2.1.3 FF&E that reflects a quality modern aesthetic and suited to the identified needs of the establishment shall be specified. [PM_10_20_82]

2.2 Definition Groups and Responsibilities

2.2.1 Each item of FF&E shall be in one of four groups, which identify the responsibility for procurement, fixing and placing:

- a) Group 1: FF&E, Fittings, Furniture and Equipment supplied new and fitted by the Contractor, including all fittings and fitted furniture. [EF_40]
- b) Group 2: F&E, Furniture and Equipment as identified in College-specific Annex CS1 or the CSB, provided either by the Contractor (purchased new) or College/others (from Legacy or purchased new). When items are Legacy, it is the responsibility of the Contractor to ensure Group 2 items are working and safe prior to and after installation. The Contractor shall carry out an assessment of each working Legacy item to determine if it shall be re-used, upgraded or Replaced with new. [EF_40]
- c) Group 3: F&E, Furniture and Equipment, generally loose and provided either by the College/others (from Legacy or purchased new) or, where appropriate, the Contractor (purchased new). Group 3 items shall be positioned by the Contractor. [EF_40]
- d) Group 4: Small items of loose equipment provided by the College/others which shall be boxed by the College/others and decanted by the Contractor. [EF_40]

2.3 Refurbishment

2.3.1 As described in the GDB, any work required to Refurbished Buildings shall be as defined in the Refurbishment Scope of Works (RSoW). FF&E elements are captured under the headings of architectural elements. [Ac_10_70_70]

2.3.2 Unless specified otherwise in this Technical Annex, where a fitting or item of fitted furniture is required in the RSoW, under the headings of architectural elements, it shall be categorised as Renewed, Replaced, Repaired, Retained or have 'No Work':

- a) 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). [Ac_10_70_70]
- b) 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 sub-structure. [Ac_10_70_70]
- c) Repaired FF&E shall comply with the specifications in any project-specific drawing issued as part of the CSB, and the overall performance after repair shall be at least as good as that of the existing provision. [Ac_10_70_70]
- d) 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. [Ac_10_70_70]
- e) Elements requiring 'No work' shall be left as existing. [Ac_10_70_70]

2.3.3 In respect of Refurbished Works, the required level of compliance with this Technical Annex is set out in the RSoW. [PM_10_20_90]

2.3.4 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 Annex CS1. [PM_10_20_90]

3 The FF&E Process

3.1 Overview

3.1.1 This section sets out the process for the delivery of the FF&E proposed, including development of the room layouts, purchasing and delivery and the decant protocol where applicable. [PM_10]

3.2 Room Layouts

3.2.1 The Contractor shall initially produce notional FF&E layouts of key shared spaces, as listed in the Schedule of Accommodation (SoA), showing the FF&E listed in the generic ADS, alongside coordinated elevations, views and FF&E schedules. These shall be developed into college-specific layouts for inclusion in the Contractor's Proposals. [PM_10_20_82]

3.2.2 Where Legacy F&E is being provided by the College or others, the College, assisted by the Technical Advisor, with the agreement of the Employer, shall list on a proforma (Annex CS3 and Annex CS4) all Legacy Group 2 and 3 items to be transferred with proposed locations. [PM_10_20_90]

3.2.3 During the pre-contract design process, all Group 1 and Group 2 items shall be shown on layouts for every space identified in Annex CS1. These items shall be listed on the Contractor's College-specific ADS. [PM_10_20_90]

3.2.4 If the FF&E is different from the generic items shown on the ADS a layout shall be provided detailing the adjustments, with the agreement of the Employer. [PM_10_80_10]

3.2.5 When the proposed area or shape of a space significantly differs (e.g., in a Remodelled Area or Refurbished Building) from the dimensions and shape recommendations in the GDB and Annex CS1, the Contractor shall illustrate an example layout showing all FF&E in that space, including the loose FF&E items. [PM_10_80_10]

3.2.6 Where the Contractor is fixing or installing Group 2 Legacy F&E, all FF&E layouts shall address the following points:

- a) Legacy FF&E (both internal and external) shall be located in accordance with the requirements in the CSB, the GDB as well as this Technical Annex [EF_40]
- b) Legacy FF&E shall be integrated with any new FF&E [EF_40]
- c) where Legacy FF&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, a layout shall be provided detailing the adjustments, with the agreement of the Employer. [PM_10_80_10]

3.2.7 Once agreed by the Employer, the list of Legacy items in Annex CS3 and CS4 schedules and the Group 1 items as defined in the DfE's EIR shall form the basis of the final Contractor's Proposal for FF&E. [PM_10_20_90]

3.3 Purchasing and Delivery

3.3.1 The Contractor shall:

- a) 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 [PM_10_20_82]
- b) ensure that delivery of Group 1 FF&E (and, where the Contractor is purchasing, other F&E) is only installed once the Building is ready to receive it [PM_10_20_82]
- c) ensure responsibility for Group 1 FF&E (and, where the Contractor is purchasing, other F&E) coordination on site, including timescales for delivery and programme. Responsibilities and eventualities are to be defined and agreed [PM_10_20_82]
- d) agree with the Employer the delivery location for new Group 3 F&E. The space(s) should enable the assembly of flat packed items [PM_10_20_82]
- e) liaise with the Employer to ensure Legacy items are securely stored unless the College has agreed to take responsibility for the serviceability and temporary storage of any item, as specified in the CSB [PM_10_20_82]
- f) be responsible for managing the programming and delivery of any additional items of Group 2 or 3 F&E to meet the project delivery programme. [PM_10_20_82]

3.4 FF&E Decant Protocol

3.4.1 General decant requirements are set out in the Decant Protocol, with a section on the Relocation of Legacy Furniture and Specialist Equipment. An overview of FF&E requirements is given below:

- a) the Contractor shall develop, and agree with the Employer, a decant process and programme [PM_60_20_26]
- b) the programme shall take into account any health and safety management plan applicable to the College and any requirements set out in the CSB [PM_80_60_50]
- c) the Contractor shall develop and agree with the Employer, a detailed Decant Programme that considers the coordination of FF&E, ICT and M&E provision [PM_60_20_24]
- d) the Decant Programme shall be agreed by the Employer at least six months prior to decant when the layout position of all FF&E is determined [PM_60_20_24]
- e) the Contractor shall nominate a named decant manager who shall actively manage the process and liaise with the Employer [PM_60_20_26]

- f) the Decant Programme shall describe the Contractor's timings of deliveries up to and around Handover to allow coordination of on-site trades, FF&E installations, ICT networking, ICT equipment installation and testing [PM_60_20_24]
- g) the Contractor shall schedule sufficient time to assess the College'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. The Contractor shall accept responsibility for the safe and legal disposal of any items requiring disposal, including obtaining appropriate certification from relevant authorities [PM_60_30_22]
- h) boxes and crates shall be delivered to the College, in line with the Decant Programme, over an agreed number of weeks (to be defined and agreed in early project planning), prior to the move with particular consideration given to Group 4 items [PM_60_20_26]
- i) a collection point for crates or boxes shall be agreed with the College, and the Contractor shall confirm how long crates can be kept following the move and the contra charges incurred after that time [PM_60_20_26]
- j) once packed, arrangements shall be made for the packed boxes/crates to be stored and labelled [PM_60_20_26]
- k) the Contractor shall agree with the Employer and College 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 [PM_60_20_26]
- l) 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 [PM_60_20_26]
- m) it should be possible for IT equipment to be placed on the relevant furniture before system testing. [PM_60_20_26]

3.4.2 The expectations being placed on the College by the Contractor shall be explicitly set out in the Decant Protocol and Decant Programme. [PM_60_20_26]

3.4.3 If additional days of closure of the College is required or input required by the College over holiday periods, this shall be pre-agreed with the Employer and College. [PM_60_20_26]

4 Specialist Space FF&E Layout Requirements

4.1 Overview

4.1.1 All layout requirements listed in the GDB, the CSB as well as this Technical Annex shall be submitted for approval. [PM_10_20_90]

4.1.2 Annex CS3 and Annex CS4 shall be referred to when identifying F&E which needs to be positioned and/or installed. [PM_10_20_90]

4.1.3 A definition of the spaces outlined below are given in Technical Annexes 1A and 1B. [PM_10_20_90]

4.2 Vocational workshops

4.2.1 Space around any machinery shall allow safe use of the machine and prevent the operator from being accidentally pushed into by passers-by. [PM_10_80_85]

4.2.2 Contractors shall be aware of space allocations in line with manufacturer's recommendations around all machine equipment. [PM_10_80_85]

4.2.3 Consultation by a specialist should be undertaken to ensure safe space allocations are provided to each machine. [PM_10_80_85]

4.2.4 When planning workshop spaces consideration shall be given to Legacy and any new Equipment to be installed and the impact on the space size, including ergonomic and H&S impacts with regard to ease and safety of movement throughout the space for all users. [PM_10_80_85]

4.2.5 All clearance spaces are to be set out line with manufacturer's recommendations. [PM_10_80_85]

4.2.6 In catering environments, space between items of furniture and equipment shall enable students and staff (including those in wheelchairs) to move around safely, particularly during practical sessions. [PM_10_80_85]

4.2.7 Table 1 shows recommended safe working area ranges around a sample range of equipment in food-preparation areas. [PM_10_80_85]

4.2.8 Where cookers and worktop run back-to-back (e.g., in a peninsular arrangement), a 250mm overlap is allowable, resulting in a total clearance of 1750mm (1000mm+1000mm-250mm). [PM_10_80_85]

4.2.9 It is assumed that the cooker and sink are set in a continuous work surface, and dual height surfaces or height adjustable surfaces are provided in all instances. Alternative arrangements to this must be approved by the Employer. [PM_10_20_82]

Food preparation area	Clear dimension (mm)
Space required in front of cooker	1200
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 1 Food Preparation

4.3 Commercial Catering Environment

4.3.1 Design Requirements

4.3.1.1 The size of the kitchen and the ancillary spaces (as given in Annex CS1) depends on the number and types of meals cooked (as detailed in the CSB). [PM_10]

4.3.1.2 The kitchen layout shall provide clearly identified zones of activity, which include:

- a) 'dry' storage for raw materials [SL_90_50_29]
- b) 'cold' storage [SL_90_50_15]
- c) storage for frozen products [Pr_40_70_31_31]
- d) food preparation space [SL_35_60_30]
- e) storage for equipment, utensils, crockery and cutlery [Pr_40_30_87]
- f) efficient circulation space for staff to work in (see Table 1) [PM_10_80_85]
- g) an area for checking in stock for receiving and unpacking of goods [PM_10_80_85]
- h) space for waste and recyclable materials [SL_50_35_60]
- i) separate storage for cleaning equipment and chemicals [SL_30_60]
- j) a WC and changing area with storage for clothing and personal belongings of staff [SL_35_80_89]
- k) a designated space for administrative work in colleges with 210 students or more. [SL_20_15_59]

4.3.2 Planning

4.3.2.1 Kitchens shall allow a continuous progression of activities from delivery of goods through to preparation, serving of food through to washing up with no crossover to avoid contamination. [SL_35_60_14]

4.3.2.2 The kitchen shall meet the following requirements:

- a) an office, where appropriate, shall be sited close to the loading area but within the preparation area to provide sight of all the activities [PM_10_80_85]
- b) stores shall be located close to the delivery and unloading area [PM_10_80_85]
- c) separate storage for edible foodstuffs (i.e., fish to be kept separate from meat, dairy products to be kept separate from vegetables etc) to prevent cross contamination [PM_10_80_85]
- d) dry food store is in a cool area away from a boiler room, plant space or kitchen appliances where there may be heat transfer through the walls and pipes [PM_10_80_85]
- e) vegetable preparation area shall be near the delivery point, allowing only clean, prepared vegetables to enter the main preparation kitchen [PM_10_80_85]
- f) work surface allocation shall allow for the preparation of different food types in designated areas (e.g., to prepare for special diets) [PM_10_80_85]
- g) there shall be no acute corners or areas inaccessible to cleaners or cleaning machines [PM_80_10_50]
- h) all equipment shall be easily moveable for cleaning [PM_80_10_50]
- i) equipment, where appropriate, to be on lockable castors. Where gas supplies exist, hoses shall not inhibit equipment to be moved for easy cleaning and servicing [PM_10_20_82]
- j) wash-hand basins (not set in worktops) shall be placed at all entrances to the kitchen with soap dispensers, paper towel dispensers and covered waste bins (for paper towels) [PM_10_80_85]
- k) the main cooking equipment shall be located, wherever possible, in an island with sufficient worktop space adjacent to allow 'put-down' space [PM_10_80_85]
- l) processes such as frying etc shall be grouped together, preferably in a central cooking suite rather than against a wall [PM_10_80_85]
- m) disposal of waste food and washing dirty crockery shall be allocated space near the entrance to the dining room [PM_10_80_85]
- n) direct access to the external waste food storage/treatment area (to prevent cross contamination) shall be provided from the kitchen [PM_10_80_85]
- o) direct access from the dining area to the crockery wash area in the kitchen without passing through the servery area [PM_10_80_85]
- p) the crockery wash area shall have a space for loaded trolleys. [PM_10_80_85]

4.3.2.3 There shall be distances between catering equipment to allow staff to work safely and effectively. [PM_10_80_85]

4.3.2.4 Table 2 shows recommended safe working area/area ranges in commercial kitchens. [PM_10_80_85]

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 2 Clearances for Catering Kitchen

4.3.2.5 High efficiency kitchen equipment shall be used to achieve the good practice benchmarks for energy usage for colleges given in CIBSE TM50 'Energy Efficiency in Commercial Kitchens', 2021. [PM_10_20_90]

4.3.3 Commercial Sub-Let Catering Environment

4.3.3.1 There shall be areas provided for commercial subletting of food offerings. [PM_10_20_82]

4.3.3.2 A 'shell & core' should be provided with 2nd fix services in place. [PM_10_20_82]

4.3.3.3 The vendor shall provide setting out drawings for approval by the College before any construction works take place. [PM_10_20_82]

4.3.3.4 All catering provision designs must be in line with sections 4.3.1 and 4.3.2 of this Technical Annex. [PM_10_20_90]

4.3.3.5 Any required deviations from these sections must be prior approved by the Employer before reasonable derogations are permitted. [PM_10_20_82]

4.4 Science Environment

4.4.1 Space between items of furniture and equipment in laboratories shall enable students and staff (including those in wheelchairs) to move around safely, particularly during practical sessions. [PM_10_80_85]

4.4.2 Table 3 shows recommended safe working area ranges around a sample range of 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. [PM_10_80_85]

4.4.3 The fume cupboard shall be positioned away from the fire exit or main circulation routes with clear access for groups of students during demonstrations. [PM_35_50]

4.4.4 Fume cupboards shall be located away from benches, windows, walls and doors, to prevent affecting performance. [PM_10_20_82]

4.4.5 Any subject specific areas and equipment to be designed in consultation with specialist. [PM_10_20_82]

Science laboratory tables	Clear Dimension (mm)
Tables back to back ¹	1400-1650 1800-2000
Tables side to side (circulation route) ¹	900-1050
Back of table to front to table ¹	900-1200
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

Table 3 Science Laboratory Tables

¹ Use upper limit where there is a run of more than 2 tables.

4.5 Classrooms and seminar spaces

4.5.1 Space between items of furniture in classrooms and seminar spaces shall allow students and staff (including those in wheelchairs) to move around safely. [PM_10_80_85]

4.5.2 Table 4 shows the recommended distance ranges.

General classroom tables	Clear Dimension (mm)
Tables back to back ¹	1800-2000
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

Table 4 General Classroom Tables

¹ Use upper limit where there is a run of more than 2 tables or ICT benching.

4.6 Locker areas

4.6.1 Lockers shall be located as the Schedule of Accommodation (SoA).

[PM_10_20_90]

4.6.2 Lockers shall be manufactured using fully welded 16-gauge sheet steel for the carcass and 14-gauge sheet steel doors. [PM_10_20_82]

4.6.3 Locker components shall be powder coated prior to assembly to ensure all surfaces are protected. [PM_10_20_82]

4.6.4 Lockers placed in corridors shall meet a Class A2-s3, d2 fire rating. [PM_35_30]

4.6.5 Space between lockers shall allow students and staff (including those in wheelchairs) to access their belongings and move around safely. [PM_10_80_85]

4.6.6 Table 5 shows recommended ranges for safe circulation and access to lockers. [PM_10_80_85]

4.6.7 Lockers over 1400mm high shall be fixed back to the wall for stability and safety. [Pr_40_30_87_48]

4.6.8 The locking mechanism used shall be listed in the CSB. [PM_10_20_90]

4.6.9 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. [Pr_40_30_87_48]

4.6.10 To prevent rusting, lockers shall be placed off the floor surface if floors are mopped rather than vacuumed. [Pr_40_30_87_48]

Recommendation	Clear Dimension (mm)
Clear space in front of lockers	750
Distance between front of locker and wall	1500
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

5 Performance and Quality

5.1 Ergonomic Requirements

5.1.1 Inappropriately sized and designed furniture can affect the comfort and concentration of students and staff and lead to accidents and/or back pain in later life. [PM_10]

5.1.2 Furniture shall be selected for the activities being carried out in each space. [PM_10_20_82]

5.1.3 Furniture shall be selected that is accessible for all students and staff to use with ease. Selected items shall provide staff and students with a variety of heights, sizes and options. [PM_10_20_82]

5.2 Materials and construction

5.2.1 General Requirements

5.2.1.1 Certificates of compliance shall be 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 other recognised equivalents. [PM_35_10_60]

5.2.1.2 FF&E shall comply with ISO 9001:2015 and BS EN ISO 14001. [PM_35_10_60]

5.2.1.3 Samples of items of Group 1 furniture (or other furniture purchased by the Contractor) shall be made available to the Employer for approval. [PM_10_20_82]

5.2.1.4 The materials used for FF&E shall be compliant with the requirements specified below and in this Technical Annex, to ensure they are safe. All F&E shall provide:

- a) contrasts of colour for students with visual impairment, for example the carpet and the chair colour shall differ from that of tables [Ss_40_15_35_35]
- b) finishes appropriate for the activities taking place in the room [Ss_40_15_35_35]
- c) robust edging materials not susceptible to misuse [Ss_40_15_35_35]
- d) edges, corners and frames on dining tables which shall not trap food [Ss_40_15_35_35]
- e) sound absorbency necessary to meet the acoustic requirements of that space [Ss_40_15_35_35]
- f) items using low VOC materials including for cabling, paints and adhesives and manufactured to prevent 'off-gassing' pollutants like volatile organic compounds (VOC). [Ss_40_15_35_35]

5.2.2 Metal

5.2.2.1 304 or 430 grade stainless steel shall be used in sinks and fabricated commercial kitchen furniture which is corrosion and heat resisting. [PM_10_20_82]

5.2.2.2 430 grade stainless steel shall be used for frames and legs of tables in commercial kitchens. [PM_10_20_82]

5.2.2.3 316 stainless steel grade acid resistant sinks shall be used in laboratories and science preparation rooms. [PM_10_20_82]

5.2.2.4 Alternative materials for sinks shall be laboratory grade epoxy resin, polypropylene or acrylic. [PM_10_20_82]

5.2.2.5 Worktops shall be supported on steel leg frames constructed from square section fully welded tube at a minimum of 32mm square section or equivalent. [PM_10_20_82]

5.2.2.6 The legs of worktops shall be fitted with adjustable levelling feet. [PM_10_20_82]

5.2.2.7 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'. [PM_10_20_90]

5.2.2.8 Where ICT is used, frames shall be capable of supporting cable management systems. [PM_10_20_82]

5.2.3 Manufactured board

5.2.3.1 Laminated manufactured board shelving shall be provided in storerooms a minimum of 18mm thick. [PM_10_20_82]

5.2.3.2 Carcasses of storage units shall be manufactured from laminated manufactured board, a minimum of 18mm thickness and edged in pressure applied PVC or an alternative material with the same attributes. [PM_10_20_82]

5.2.3.3 Moisture resistant boards shall be selected where risk of water contact is high. [PM_70_95_70]

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. [PM_10_20_82]

5.2.4.2 Timber shall be purchased in accordance with the UK Government's timber procurement policy. [PM_10_20_82]

5.2.4.3 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 shall be used. [PM_10_20_82]

5.2.4.4 Where timber tops are used for worktops and tables in Vocational Spaces, they should have a minimum thickness of 25mm as standard. Contractor to allow for variations of this thickness where durability requirement is not met e.g., workshops. [PM_10_20_82]

5.2.5 Laminate and core material

5.2.5.1 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. [PM_10_20_82]

5.2.5.2 If the core material is MDF, the edges shall be bull nosed, polished or lacquered MDF. [PM_10_20_82]

5.2.5.3 Laminate worktops shall be no less than 25mm thick and edged with an impact and water-resistant material. [PM_10_20_82]

5.2.5.4 Laminated tabletops shall be no less than 18mm thick. [PM_10_20_82]

5.2.5.5 Vertical edges of doors and drawer fronts shall be post-formed or edged with high pressure applied PVC or similar. [PM_10_20_82]

5.2.5.6 Worktops used in catering environments shall be heat-resistant to 180°C. [PM_35_10_32]

5.2.5.7 Solid work surfaces shall be provided in Vocational Spaces, art rooms, science teaching spaces and science preparation spaces and shall be no less than 16mm thick. [PM_10_20_82]

5.2.2.8 Worktops in workshops shall be high grade stainless steel. [PM_10_20_82]

5.2.5.9 Drainage grooves around sink areas shall be machined into the worktop material where solid grade laminate is used. [PM_10_20_82]

5.2.5.10 The tops of science worktops shall be firmly fixed to the base unit with a minimum of eight fixing points to prevent the tops becoming loose from the base and the potential of the gas pipe fracturing. [PM_10_20_82]

5.2.5.11 The science pedestals shall be firmly fixed to the floor with appropriate fixings to prevent them becoming loose and the potential of the gas pipe fracturing. [PM_10_20_82]

5.2.5.12 Where solid laminate is used as locker doors, it shall be of a fire-resistant standard. [PM_35_30]

5.2.5.13 Laminates shall meet the requirements of BS EN 438-3:2016: 'High pressure decorative laminates (HPL)'. [PM_10_20_90]

5.2.6 Upholstered materials

5.2.6.1 All fabric used shall meet BS 7176: 2007 and BS 7177: 2008 'Low Hazard' for resistance to ignition on non-domestic upholstered furniture. [PM_10_20_90]

5.2.6.2 All fabric shall achieve minimum of 40,000 rubs on the Martindale test, grading it suitable for commercial, heavy hospitality use. [PM_10_20_82]

5.2.6.3 Fabric specification in catering environments should be anti-bacterial/anti-microbial, waterproof and stain resistant. [PM_10_20_82]

5.2.6.4 Fabric specification in workshop environments should be stain resistant. [PM_10_20_82]

5.2.7 Blinds and curtains

5.2.7.1 All fabric used for blinds and curtains shall be fire retardant and, if located behind or near to sinks, shall be water resistant. [PM_35_10]

5.2.7.2 As a safety precaution cords and chains for blinds in colleges shall comply with BS EN 13120, particularly where Early Years children aged up to 42 months are accommodated (see the section on [Reference Standards](#)). [PM_10_20_82]

5.2.7.3 Blinds and curtains in large spaces and other spaces higher than 3.6m shall be remotely operated through either a mains powered system or manually operated cranked rods. [PM_10_20_82]

5.2.7.4 Where required blinds shall allow for blackout to room, blinds should be fitted with wall tracks and bottom bars. See CSB guidance for locations. [PM_10_20_90]

5.2.7.5 Drapes shall form a proscenium arch at the front of the performance area in a hall comprising two sections with a 50-100% fabric fullness, suspended from a track and opened via a pulley system and closed from the centre to off-stage. [PM_10_20_82]

5.2.8 Defibrillators

5.2.8.1 Automated defibrillators (AEDs) shall be applicable in all New, Whole College or Partial College Projects, inclusive of refurbishment and/or block replacements. [Pr_40_70_51_22]

5.2.8.2 The CSB states specific scheme requirements. [Pr_40_70_51_22]

5.2.8.3 AEDs located outside the College Building(s) shall be housed in:

- a) a secure cabinet with a code operated locking mechanism
- b) a thermostatically controlled cabinet (refer to Technical Annex 2G).

5.2.8.4 The AEDs shall be purchased by the Contractor from the National Health Service (NHS) Supply Chain Framework (Defibs4Schools). [Pr_40_70_51_22]

5.2.8.5 Reference shall be made to [Automated external defibrillators – a guide for schools](#).

6 Minimum Requirements of Fittings, Fitted Furniture and Equipment

6.1 Overview

6.1.1 The Contractor shall supply all Group 1 fittings and fitted furniture and equipment items required in the section on [Group 1 FF&E - specific requirements for each space type](#) or listed in the CSB or Annex CS1. [PM_10_20_90]

6.1.2 Additional FF&E listed in the CSB or Annex CS1 shall also meet these specifications. [PM_10_20_90]

7 Group 1 FF&E - specific requirements for each space type

7.1 Overview

7.1.1 Group 1 FF&E items are listed, for each room, with more specialised or additional College-specific FF&E listed in Annex CS1. [PM_10]

7.1.2 The specification of all Group 1 FF&E shall be as the CSB and Area Data Sheets. [EF_40]

7.1.3 For each teaching space, the Contractor shall provide a whiteboard (BOW01). [Pr_40_30_25_96]

7.1.4 The Contractor shall provide 1 noticeboard (BOA001) for large spaces (halls, studios, social or dining areas). [Pr_40_30_25_58]

7.1.5 The Contractor shall provide 1 noticeboard for heavy practical spaces and arts & DT learning resources. [Pr_40_30_25_58]

7.1.6 The Contractor shall provide 2 noticeboards for all other basic teaching spaces and occupied learning resource spaces. [Pr_40_30_25_58]

7.1.7 The Contractor shall provide 3 noticeboards for art rooms. [Pr_40_30_25_58]

7.1.8 For all staff and admin spaces, a noticeboard and set of shelves shall be provided for each workstation. [PM_10_20_82]

7.1.9 A whiteboard and noticeboard are required for each preparation space and staff workroom. [PM_10_20_82]

7.1.10 Noticeboards in all circulation spaces shall be fire-retardant, fitted with a glass or polycarbonate cover, preferably top hung, and shall be no more than 3m long. There should be a gap of at least 1m between noticeboards. [Pr_40_30_25_58]

7.1.11 Noticeboards in teaching spaces shall not extend more than 2.5m in width without having a break between them of at least 0.4m. [Pr_40_30_25_58]

7.1.12 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. [Pr_40_30_25_58]

7.1.13 All noticeboards and display boards used in colleges (except individual signs/notices required under the Health and Safety (Safety Signs and Signals) Regulations 1996, and small noticeboards/graphic displays up to 1m²), shall 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. [PM_35_30]

7.1.14 Where side-benching is required, and unless otherwise stated, it shall run along the full length of a wall. [Pr_40_30_30]

7.1.15 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. [PM_10_80_85]

7.1.16 Where worktop facilities are provided, some dual height or adjustable surfaces should be installed. [Pr_40_30_30]

7.1.17 Adjustable height storeroom shelving shall be provided to the full length of 3 walls with shelf heights no greater than 1800mm. [Pr_40_30_78_77]

7.1.18 In an existing college, where storage systems are attached to the walls for stability these may be re-used, Contractors shall be assured they are of an appropriate quality. [Pr_40_30_78_77]

7.1.19 All furniture in science spaces and ICT-rich rooms shall be provided by the Contractor. [EF_40]

7.1.20 Where machines for D&T workshops are identified as Group 2, they shall be based on the existing provision listed in Annex CS3 of the CSB. [PM_10_20_90]

7.1.21 Legacy machines shall be installed or, if necessary, Repaired or Replaced by the Contractor depending on condition and safety. [PM_10]

7.1.22 The basic condition of the machines shall be recorded by the College on their Annex CS3. [PM_30_10_15]

8 Demonstrating Compliance

8.1 Overview

8.1.1 The Contractor shall demonstrate compliance with the Employer's Requirements by use of protocols detailed in the Contractor's Quality Assurance procedures capturing evidence of both coordinated design and its implementation into the construction of the College Building(s) with photographic evidence and/or third-party accreditation.

[PM_70_15]

9 Reference Standards

9.1 Overview

9.1.1 The design installation, commissioning of the Fittings, Furniture and Equipment and handover documentation shall comply with all relevant deliverables contained within the DfE's EIR, as well as the following (or updated documents if relevant). [PM_10_20_28]

9.2 Chairs and Tables

9.2.1 Reference Standards for Chairs and Tables:

- a) BS EN 16139:2013: 'Furniture. Strength, durability and safety' [FI_70_85]
- b) BS EN 1729: 1:2012+A1:2015: 'Furniture. Chairs and Tables for educational institutions. Functional dimensions' [FI_70_85]
- c) BS EN 1729: 1:2012+A1:2015: 'Furniture. Chairs and Tables for educational institutions. Safety requirements' [FI_70_85]

9.3 Upholstery

9.3.1 Reference Standards for Upholstery:

- a) BS EN 7176: 2007+A1:2011: 'Specification for resistance to ignition of upholstered furniture for non-domestic seating by testing composites' [FI_70_85]
- b) BS EN 16139:2013: 'Furniture. Strength, durability and safety. Requirements for non-domestic seating' [FI_70_85]
- c) BS 7176:2007+A1:2011: 'Specification for resistance to ignition of upholstered furniture for non-domestic seating by testing composites' [FI_70_85]
- d) BS 7177:2008+A1:2011: 'Specification for resistance to ignition of mattresses, mattress pads, divans and bed bases' [FI_70_85]
- e) BS EN 597:1:2015: 'Furniture. Assessment of the ignitability of mattresses and upholstered bed bases. Ignition source smouldering cigarette 'Chairs and Tables' [FI_70_85]
- f) BS EN 1729-1:2012+A1:2015: 'Furniture. Chairs and tables for educational institutions. Functional dimensions' [FI_70_85]
- g) BS EN 1729-2:2012+A1:2015: 'Furniture. Chairs and tables for educational institutions. Safety requirements and test methods' [FI_70_85]

9.4 Storage

9.4.1 Reference Standards for Storage:

- a) BS EN 16121:2013+A1:2017 'Non-domestic storage furniture. Requirements for safety, strength, durability and stability' [FI_70_85]
- b) BS EN 14749: 'Furniture. Domestic and kitchen storage units and kitchen-worktops. Safety requirements and test methods' [FI_70_85]
- c) BS 4680:1996: 'Specification for clothes lockers' [FI_70_85]
- d) BS EN 14073-2: 2004: 'Office furniture. Storage furniture. Safety requirements' [FI_70_85]
- e) BS EN 14073-3:2004: 'Office furniture. Storage furniture. Test methods for the determination 'of stability and strength of the structure' [FI_70_85]
- f) BS 6222-3:1999: Domestic kitchen equipment. Performance requirements for durability of surface finish and adhesion of surfacing and edging materials. Specification' [FI_70_85]

9.5 Sinks

9.5.1 Reference Standards for Sinks:

- a) BS EN 13310:2015: 'Kitchen sinks. Functional requirements and test methods' [FI_70_85]
- b) BS 1206:1974: 'Specification for fireclay sinks: dimensions and workmanship' [FI_70_85]

9.6 Laboratories

9.6.1 Reference Standards for Laboratories:

- a) BS EN 14056:2003: 'Laboratory furniture. Recommendations for design and installation' [FI_70_85]
- b) BS EN 13150: 2001: 'Workbenches for laboratories. Dimensions, safety requirements and test methods' [FI_70_85]
- c) BS EN 14175-2:2003: 'Fume cupboards. Safety and performance requirements' [FI_70_85]
- d) G9 'Fume Cupboards in Schools' 2014. CLEAPSS [FI_70_85]

9.7 Retractable bleacher seating

9.7.1 Reference Standards for Retractable bleacher seating:

- a) NFPA 102 National Fire Protection Association. Standard for Grandstands, Folding and Telescopic Seating, Tents, and Membrane Structures - Effective Date: 2015 [FI_70_85]
- b) BS EN 13200- Parts 1-5: 2012: 'Spectator facilities. General characteristics for spectator viewing area' [FI_70_85]

- c) BS EN 12727:2000: 'Furniture. Ranked seating. Test methods and requirements for strength and durability Test Level 4, Severe Category Use' [FI_70_85]

9.8 Blinds and curtains

9.8.1 Reference Standards for Blinds and curtains:

- a) BS 5867: Part 2: 2008: 'Fabrics for curtains, drapes and window blinds. Flammability requirements. Specification' [FI_70_85]
- b) EN13120:2009+A1:2014: 'Internal blinds. Performance requirements including safety' [FI_70_85]

9.9 Equipment

9.9.1 Reference Standards for Equipment:

- a) BS EN 14434:2010: 'Writing boards for educational institutions. Ergonomic, technical and safety requirements and their test methods' [FI_70_85]
- b) BS 5852 Clause 12: Methods of test for the ignitability of complete items of furniture. Noticeboards [FI_70_85]
- c) CEN/TC 136 3/2021, Revision of EN 914:2020 [FI_70_85]
- d) BS EN 1270: 2005: 'Playing field equipment - Basketball equipment - Functional and safety requirements, test methods' [FI_70_85]
- e) BS 4163 Health and safety for design and technology in educational and similar establishments – Code of practice [FI_70_85]



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