



Department  
for Education

# Further Education Output Specification

**Technical Annex 2D: Internal Elements  
and Finishes**

**November 2021**



## Document Control

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## Summary

Technical Annex 2D provides the minimum requirements for internal fabric and finishes. It is to be read in conjunction with the Generic Design Brief (GDB) and the College-specific Brief (CSB).

## Review Date

Review dates for this document shall be at 6-month intervals.

## 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 \(thenbs.com\)](https://thenbs.com).

# 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 internal elements and finishes. [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]



## 2. General Requirements

### 2.1. Overview

2.1.1 Exposure to ultraviolet light shall not affect the visual properties or technical performance of any element or component [PM\_35]

2.1.2 All internal finishes and fittings provided shall be such that levels of Volatile Organic Compounds in the air do not exceed  $300\mu\text{g}/\text{m}^3$  averaged over eight hours and in accordance with manufacturers data. [PM\_35]

2.1.3 Reference shall be made to the CSB to identify specific requirements for internal finishes and elements for students with Special Educational Needs or Disabilities (SEND). [PM\_35]

2.1.4 Hygrothermal performance required in doorsets, ceilings and wall finishes shall be met through the achievement of a satisfactory performance when subject to the environmental conditions in Table 1, as measured in accordance with DD171:1987 'Guide to specifying performance requirements for hinged or pivoted doors (including test methods)', test 10 and 11. [PM\_10\_20\_90]

ADS Code	Rating	Environmental Conditions to be accommodated
0.1	normal	One Side - 25% RH at 10°C Opposite Side - 65% RH at 25°C
0.2	humid	One Side - 25% RH at 10°C Opposite Side - 85% RH at 25°C
0.3	wet	One Side - 25% RH at 10°C Opposite Side - 98% RH at 25°C

**Table 1 Minimum Hygrothermal Performance Requirements**

### 2.2. Refurbishment

2.2.1 Work required to Refurbished Buildings shall be as defined in the Refurbishment Scope of Works (RSoW), under the headings of architectural elements (including FF&E) and M&E elements (including ICT Infrastructure). [Ac\_10\_70\_70]

2.2.2 The work shall be categorised as Renewed, Replaced, Repaired, Retained or have 'No Work':

- a) Renewed internal elements or finishes 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 internal elements or finishes 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 internal elements or finishes shall comply with the specifications in any project-specific drawing issued as part of the CSB. The overall performance after repair shall be at least as good as that of the existing provision. [Ac\_10\_70\_70]
- d) Retained internal elements or finishes 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]

2.2.3 In respect of Refurbished Works, the required level of compliance with this Technical Annex is set out in the RSoW. [PM\_10\_20]

2.2.4 The requirements in this Technical Annex apply to all parts of the Works except any internal elements or finishes that are designated Repaired, Retained or 'No Work' in the RSoW, or spaces designated 'Untouched' in Annex CS1. [PM\_10\_20\_90]

2.2.5 Where refurbishment is being carried out, the existing internal elements and finishes shall be assessed. [PM\_10\_20\_82]

2.2.6 The Contractor shall establish any areas that do not meet current regulations or the requirements of the GDB, this Technical Annex, or the CSB and report these to the Employer. [PM\_10\_20]

2.2.7 All refurbishment works shall be assessed to identify where retrospective legislation may apply and works shall be carried out to comply. [Ac\_10\_70\_70]

## 3. Internal Partitions

### 3.1. Internal Partition Performance

3.1.1 The design and construction of all internal partition walls shall comply with the following requirements.

- a) Partition fire ratings shall not be taken in isolation. [PM\_10\_20\_82]
- b) If the adjoining room has a fire resistance or is a protected stair/fire escape route, or the partition forms a fire compartment, then the partition shall be appropriately fire rated. [PM\_35\_30]
- c) In all cases, the most onerous fire rating shall be applied to the partition. [PM\_35\_30]
- d) Partitions to exam stores shall meet the requirements of the relevant qualification provider's/curriculum examination board's criteria. [PM\_10\_20\_82]
- e) In studwork partitions, pattressing shall be provided for all wall-fixed fixtures, pipework, fittings, furniture, or equipment listed on the relevant College-specific ADS, requiring a secure fixing to the wall (such as wash hand basins and shelving). [PM\_10\_20\_82]
- f) Walls with A/V equipment (existing or new) shall have an appropriate pattressed section from floor to ceiling of no less than three metres width, to allow a total loading of up to 125kg mounted with a 300mm offset. The projected image shall be clear and not disturbed by vibration. [PM\_10\_20\_82]
- g) The ceiling above the teaching wall and the teaching wall shall allow for Legacy A/V equipment to be fixed, so that the projected image is clear and is not disturbed by vibration impacts to the adjacent walls or from above. [PM\_10\_20\_82]
- h) Wall materials shall be selected to meet an impact risk assessment.
- i) The robustness duty rating for circulation areas shall be 'severe duty' (SD) as defined by BS 5234-2:1992 – 'Partitions (including matching linings). Specification for performance requirements for strength and robustness including methods of test: Table 1', to withstand impact damage from equipment and Mobility Equipment. [PM\_35\_10\_25]

- j) For all other spaces, the robustness duty rating shall be at least 'heavy duty' and capable of meeting all pull-out loads. [PM\_35\_10\_25]
- k) The minimum support for fixtures, and fittings and pipework support brackets, provided by the partitions, is to be 100N for pull out (as measured in accordance with BS 5234: Technical Annex H) and 250N for pull down (as measured in accordance with BS 5234: Technical Annex J) and shall be able to support the finishes, fixtures and equipment specified in the ADS. [PM\_10\_20\_90]
- l) The minimum crowd pressure load for all partitions shall be 1.5kN per metre, tested in accordance with BS 5234-2: Technical Annex G. [PM\_10\_20\_90]
- m) Tests to BS5234-2: Technical Annexes A to L as required shall be on partitions of at least the in-use required height (See BS5234 -2: Clause 2.2.1, Note 2: "Conformance to the criteria for a test may be claimed only for partitions equal to or less than the height of the specimen tested"). Test reports shall be made available. [PM\_10\_20\_90]
- n) Studwork and fixing detail drawings shall be provided for walls, wall junctions and door openings and shall reflect the tested door openings e.g., if an additional stud is provided 150mm from the door opening in the test it shall be recorded on the installation drawing. Typical installation photographs shall be included in the fixings' manual as part of the O&Ms. Standard door tested details for a 60kg door shall be provided, and any heavier doors shall have alternative tested details provided. [PM\_10\_20\_82]
- o) Surface spread of flame ratings and fire resistance shall be in accordance with AD B. [PM\_10\_20\_90]

## 3.2. Moveable Partitions

3.2.1 Moveable partition installations shall comply with the following requirements.

- a) A moveable partition shall not be a fire compartment, nor need any fire rating. [PM\_10\_20\_82]
- b) The partition shall meet the surface spread of flame ratings as specified in the AD B. [PM\_35\_30]
- c) The partition shall meet the sound insulation requirements specified in Building Bulletin 93 Acoustic Design of Schools. [PM\_35\_60]

- d) Where there is a moveable partition between specific areas, the minimum DnT,w between the spaces shall be 45dB unless specified in the CSB/ADS. [PM\_35\_60]
- e) Moveable wall locking mechanisms shall not be of a spring-loaded type, to avoid injury when released. [PM\_10\_20\_82]
- f) The partition shall have removable key locks to prevent unauthorised dismantling or tampering. [PM\_10\_20\_82]

## 4. Internal Doorsets

### 4.1. Internal Doorset Performance

4.1.1 Internal doorsets, shall comply with the following requirements.

- a) Resistant to marking and capable of withstanding cleaning with hot water containing mild non-abrasive detergents and disinfectants as part of a regular cleaning programme. [Ss\_25\_30\_20\_25]
- b) Sealed at the perimeter in order to provide the desired airborne sound insulation. See GDB, Internal Elements and Finishes and Table 2. [PM\_10\_20\_90]
- c) Gaps between door frames and the walls in which they are fixed shall not compromise the fire and acoustic requirements. [Ss\_25\_30\_20\_25]
- d) Gaps shall be filled and sealed in a manner to satisfy the requirements for fire safety, security and acoustic performance specified in the GDB. [PM\_10\_20\_90]
- e) Doorsets shall not be located in partitions between rooms requiring sound insulation values above 35 Rw dB, for example between music rooms. [Ss\_25\_30\_20\_25]
- f) The interface between doorsets and the surrounding substrate shall not reduce the fire performance of the partition. [Ss\_25\_30\_20\_25]
- g) Doorsets shall have fire and smoke classification. [Ss\_25\_30\_20\_25]
- h) Doorsets shall be free of visual clutter. [Ss\_25\_30\_20\_25]
- i) Elements shall visually contrast with one another by the minimum differences in Light Reflectance Value (LRV) as specified in BS 8300:2018 'Design of an accessible and inclusive built environment'. [PM\_10\_20\_90]
- j) Locking mechanisms shall be provided in accordance with sections 2.5.4.7, 2.6.4 and 2.14.2.16 of the GDB and Technical Annex 2C, as part of the suited physical key system, unless specified otherwise within the CSB. [Ss\_25\_30\_20\_25]

4.1.2 Fire doors shall be supplied as proprietary tested fire doorsets. [Ss\_25\_30\_20\_25]

4.1.3 Confirmation shall be provided of the manufacturer, the date of manufacture, and the designated fire rating and smoke seal requirement of each doorset for individual identification. [Ss\_25\_30\_20\_25]

4.1.4 Fire rated doors shall be identified on the Fire Strategy and Access and Maintenance Strategy drawings. [Ss\_25\_30\_20\_25]

4.1.5 Performance test certificates shall be provided for all fire-rated doorsets - including their ironmongery and any fingerguards - in accordance with British or European Standards, including BS 8214 'Code of practice for fire door assemblies'. [PM\_10\_20\_90]

4.1.6 Acoustically rated doorsets shall conform to BB93. [Ss\_25\_30\_20\_25]

4.1.7 All doors shall have:

a) a minimum clear opening width of 825mm through one leaf [Ss\_25\_30\_20\_25]

b) fire and smoke resistance dependent on fire strategy [Ss\_25\_30\_20\_25]

c) acoustic properties dependent on the acoustic strategy. [Ss\_25\_30\_20\_25]

<p><b>Door Types in door type code:</b></p> <p><b>First digit: dimensions, durability and strength</b></p> <p><b>Second digit: refer to Table 1 Letters: a-o:</b></p> <p><b>Ironmongery, table 4; Letter v = vision panel</b></p>	<p><b>Description</b></p>	<p><b>Types of space (as identified in Table 1 and Annex 1A)</b></p> <p>(Note all spaces are in colleges, AP or predominantly ambulant Special colleges, unless otherwise stated)</p>	<p><b>Minimum clear opening width - opening angle greater than 90 degrees is permitted</b></p>	<p><b>Minimum clear opening height</b></p>	<p><b>Mechanical durability (Class defined in BS EN12400:2002)</b></p>	<p><b>Mechanical strength (BS EN1192:2000)</b></p>	<p><b>Hygrothermal performance required, as specified in Table 1</b></p>	<p><b>Bolts &amp; push plates required to slave leaf</b></p>	<p><b>Ironmongery (see Table 4)</b></p>	<p><b>Vision panels to Part M required (No = not required unless for fire strategy)</b></p>	<p><b>Notes</b></p>
D1.1a	private	Administrative offices, Medical (MI) treatment and therapy rooms	825	2000	5	3	Normal	No	a	No	N/A
D1.1av	general	Junior classrooms, secondary General Teaching, secondary science spaces, secondary light practical spaces, social spaces, libraries and study areas, small group rooms for 8 -18 year olds, staff room,	825	2000	5	3	Normal	No	a	Yes	N/A



		staff work rooms, offices, and meeting rooms										
D1.1ev	Early Years	Early Years/nursery classrooms/ classbases, libraries and small group rooms used by Early Years	825	2000	5	3	Normal	No	e	Yes	N/A	
D2.1av	strong	Workshops	825	2000	5	4	Normal	No	a	Yes	N/A	
D2.2av	strong	Food rooms, kitchenettes, kitchen preparation areas and kitchen office	825	2000	5	4	Humid	No	a	Yes	N/A	
D2.2d	strong	Accessible toilets, accessible changing, and hygiene rooms	825	2000	5	4	Humid	No	d	No	Ergonomic handle and access control system to be agreed with School. If door leaf opens inwards, it shall be openable outwards in an emergency	

D3.2cv	toilets	Entrance to toilet suites and changing rooms	825	2000	8	3	Humid	No	c	Yes	This excludes supervisable toilet suites in Early Years or where open plan suites are required in the CSB
D3.2ov	toilets	Entrance to toilet suites and changing rooms in predominantly non - ambulant Special Schools	825	2000	8	3	Humid	No	o	Yes	Ergonomic handle and access control system to be agreed with College
D3.2b	toilets	Individual student toilets for non-disabled (not including cubicle doors)	825	2000	8	3	Humid	No	b	No	Door leaf shall open inwards but be openable outwards in an emergency
D3.2a	toilets	Individual staff toilets for non-disabled (not including cubicle doors)	825	2000	8	3	Humid	No	a	No	Additional indicator bolt required
D4.1a	storeroom	Storerooms and cupboards containing materials for lightweight activities	825	2000	3	3	Humid	No	a	No	N/A

D4.2a	storeroom	Storerooms or cupboards or stores off food, kitchen preparation or toilet areas	825	2000	3	3	Humid	No	a	No	N/A
D5.1av	strong, with vision panel	DT prep and engineering prep room or materials storage for heavy practical activities.	825	2000	3	4	Normal	No	a	Yes	N/A
D5.2av	strong, with vision panel	Food prep and food store from circulation and kitchen store rooms off kitchen preparation area	825	2000	3	4	Humid	No	a	Yes	N/A
D5.1h	strong, with vision panel	Chemical and other hazardous material stores, service ducts and plant rooms	825	2000	3	4	Normal	No	h	No	Door shall open outwards and be unlockable from inside the room
D5.2h	strong, with vision panel	Chemical and other hazardous material stores, service ducts and plant rooms accessed from humid areas such as kitchens	825	2000	3	4	Humid	No	h	No	Door shall open outwards and be unlockable from inside the room

D6.1mv	special, wide	In SEND Colleges with predominantly non-ambulant students: basic teaching, libraries, small group rooms	925	2000	5	4	Normal	No	m	Yes	Ergonomic handle and access control system to be agreed with college
D6.2mv	special, wide	In SEND Colleges with predominantly non-ambulant students: food or catering rooms, food store	925	2000	5	4	Humid	No	m	Yes	Ergonomic handle and access control system to be agreed with college
D6.2n	special, wide	In SEND Colleges with predominantly non-ambulant students: toilets, hygiene rooms and changing rooms	925	2000	5	4	Humid	No	n	No	Ergonomic handle and access control system to be agreed with college. Pull handles to both faces where double swing
DD1.1av	general double	Dining and social areas (double doors - not lobbied doors)	1650	2000	5	3	Normal	Yes	a	Yes	Plain meeting stiles
DD1.1hv	general double	Multi-use and assembly halls, performance spaces	1650	2000	5	3	Normal	Yes	h	Yes	Plain meeting stiles

		(double doors - not lobbied doors)									
DD1.1kv	general double	Sports halls, activity studios, gymnasiums	1650	2000	5	3	Normal	Yes	k	Yes	Plain meeting stiles. Must open out from hall space. All surfaces must be flush with no projecting frames or ironmongery
DD1.1fv	general double	In colleges: general purpose for circulation routes and zoning	1650	2000	5	3	Normal	Yes	f	Yes	Override to hold open device to be provided in an access restricted location
DD1.1gv	general double	In colleges: draught lobbies and staircases	1650	2000	5	3	Normal	No	g	Yes	N/A
DD1.1pv	link	Doors between paired General Teaching, light practical, small group rooms, or staff and admin spaces	1650	2000	5	3	Normal	Yes	p	Yes	Doors to open 180 degrees and be restrained in open position
DD5.1h	hail store	Sports equipment stores	1650	2400	4	4	Normal	Yes	h	No	Dimensions to suit equipment to be stored,

												particularly trampolines. Pull handles to be flush-fitting non-projecting handles
DD6.1hv	special double	In SEND Colleges: multi-use and assembly halls, performance spaces (double doors - not lobbied doors)	1650	2000	5	4	Normal	Yes	h	Yes	Yes	Plain meeting stiles. Ergonomic handle and access control system to be agreed with college
DD6.1fv	special circulation	In SEND Colleges: general purpose for circulation routes and zoning	1650	2000	5	4	Normal	Yes	f	Yes	Yes	Ergonomic handle and access control system. Override to hold open device to be provided in an access restricted location

**Table 2 Minimum Performance Requirements - Doorsets**

## 4.2. Vision Panels

4.2.1 Door vision panels shall be provided as indicated by a “v” in the doorset code in Technical Annex 1A in Table 2, of this Technical Annex or Annex CS1. [Pr\_30\_59\_97\_94]

4.2.2 Vision panels shall be provided to all teaching spaces. [Pr\_30\_59\_97\_94]

4.2.3 Toilets, hygiene rooms, Changing Places rooms and storerooms shall not have door vision panels. [PM\_10\_20\_82]

4.2.4 If any space requiring privacy such as the principal’s office, finance offices, meeting rooms etc. are required by AD B or AD M to have vision panels, they shall be provided with blinds. [Pr\_30\_59\_07]

4.2.5 Vision panels shall:

- a) provide effective zones of visibility, comply with AD K and AD M and have a minimum glazing width of 150mm [Pr\_30\_59\_97\_94]
- b) comply with BS 8300:2018 ‘Design of an accessible and inclusive built environment’ and incorporate glazing in accordance with ‘BS EN 12600 - Glass in building. Pendulum test. Impact test method and classification for flat glass’ [Pr\_30\_59\_97\_94]
- c) be included in the evidence of conformity provided for the doorset in relation to the performance requirements contained in BS EN 12600 - ‘Glass in building. Pendulum test. Impact test method and classification for flat glass’, such as those relating to fire, acoustic and security. [Ss\_25\_30\_20\_25]

4.2.6 Spaces that are required to have blackout or dim-out blinds on external glazing shall also have blackout or dim-out blinds to any internal glazed screens or vision panels. [Pr\_30\_59\_07]

4.2.7 See Technical Annex 3 for the specification for internal blinds. [PM\_10\_20\_90]

## 4.3. Glazing Standards

4.3.1 All glazing shall meet the following requirements.

- a) All glazing shall comply with BS 6262: Part 1:2017 General methodology for the selection of glazing. [Ss\_25\_60\_35]

- b) All safety glass in critical locations (defined in Section 5 of AD K4 Protection against impact with glazing) shall be third party certificated and marked in accordance with BS 6262-4:2005 Glazing for Buildings. [Ss\_25\_60\_35]
- c) Safety glass shall be indelibly marked with key information so that it is visible after installation in accordance with BS 6262-4. [PM\_10\_20\_90]
- d) Toughened glass shall meet the requirements of the relevant product standard, BS EN 12150 Toughened Glass. [PM\_10\_20\_90]
- e) Toughened glass shall be heat soak tested to minimise the extent of NiS (Nickel Sulphide Inclusions) and other impurities, which may lead to the failure of glazed components in-situ. [PM\_10\_20\_82]
- f) Annealed (float glass) shall not be used. [PM\_10\_20\_82]
- g) Laminated glass shall meet the requirements of the relevant product standard, BS EN 14449 - Glass in building. Laminated glass and laminated safety glass. [Pr\_25\_71\_33\_46]
- h) Laminated annealed glass shall have a continuous frame support system in accordance with BS 6180:2011. [Pr\_25\_71\_33\_46]
- i) Laminated annealed glass shall not be bolt fixed or point fixed e.g., using clips. [Pr\_25\_71\_33\_46]
- j) Windows and doors shall retain their structural and dimensional stability over the life cycle of the component including all working parts. [PM\_10\_20\_82]
- k) Safety glass shall be provided in all locations in Independent Living areas and spaces as defined in the CSB. [PM\_10\_20\_82]

## 4.4. Internal Glazed Screens

4.4.1 Internal glazed screens shall be provided as required in Table 3 and where additional visual connectivity is required (see GDB paragraph 2.3.23). [PM\_10\_20\_90]

4.4.2 Internal glazed screens may be immediately adjacent to the main door, as part of the doorset, or designed as internal windows with separate frames and shall be:

- a) designed with a consistent approach, for instance in relation to doorset and screen configurations within corridors [Ss\_25\_60\_35]



b) designed to ensure that the bottom edge of the glass is set at no higher than 1100mm above finished floor level [Ss\_25\_60\_35]

c) a minimum area of 1.26m<sup>2</sup>. [Ss\_25\_60\_35]

4.4.3 Internal glazed screens adjacent to a door shall be deemed to have the same minimum Rw requirement as the doorset, provided that the total area of vision is no greater than that of the opening leaf of the doorset. [PM\_35\_60]

4.4.4 Permanently occupied administrative offices and other spaces listed in Table 3 shall have an internal blind on any internal glazed panel and door vision panels, for privacy. [Pr\_30\_59\_07]

4.4.5 For glazing standards, see paragraph 4.3. [PM\_10\_20\_90]

<b>ADS Code</b>	<b>Space Name</b>	<b>Internal glazed screen (at least 600mm wide)</b>	<b>Internal blind to any internal glazed screen or vision panel</b>
OFF00 OFF10	Office or office (meeting room)	Required	Required
OFF15	Staff work room	Required	Not Required
OFF40 ADM11	Conference/ meeting room, enclosed office, head's	Not required, unless located for supervision	Required if vision panel provided
OFF16 OFF17 OFF18	Staff workroom (technical staff, ICT staff or premises)	Not required, unless located for supervision	Not Required
OFF30 ADM02 ADM08	Staff room, confidential meeting (interview) room, reprographics room	Not Required	Required if vision panel provided

ADS Code	Space Name	Internal glazed screen (at least 600mm wide)	Internal blind to any internal glazed screen or vision panel
ADM05 ADM06 ADM13	Enclosed office, with reception desk or admin	Not Required	Not Required
CIR12	Staircase	Required	N/A

**Table 3 Internal Glazed Screen and Internal Blinds Requirements**

## 5. Internal Ironmongery

### 5.1. Internal Doorset Hardware

5.1.1 The design and installation of hardware to doorsets shall comply with the following requirements.

- a) The hardware shall conform with the specifications in Table 4, to match the relevant doorset code in Technical Annex 1A or the College-specific ADS. [PM\_10\_20\_90]
- b) The hardware shall conform with the relevant specifications below and complement the strength and durability classification of the doors to which they are fitted. [Ss\_25\_38\_20\_20]
- c) Door leaves that are not steel finished shall be provided with protective kick plates. [Pr\_30\_36\_33\_45]
- d) Kick plates shall be on both sides of all door leaves and a minimum of 200mm high, or minimum 450mm in any specialist area as defined in the CSB. [Pr\_30\_36\_33\_45]
- e) Doorstops shall be:
  - i) fitted to prevent the door leaf damaging adjacent surfaces and the door leaf itself [Pr\_30\_36\_33\_24]
  - ii) fitted to adjacent skirting boards as close to the leading edge of the leaf as possible [Pr\_30\_36\_33\_24]
  - iii) not be less than two thirds of the door width away from the hinge line [Pr\_30\_36\_33\_24]
  - iv) located in positions where they may not constitute a trip hazard. [Pr\_30\_36\_33\_24]

5.1.2 Ironmongery inside sports halls, activity and dance studios and other spaces housing physical activity shall be flush fitting. [Ss\_25\_38\_20\_20]

5.1.3 Accessible staff toilets shall have ironmongery that prohibits general access, and which allows access for staff and disabled users only. [Ss\_25\_38\_20\_20]

5.1.4 Door handles shall satisfy the requirements of BS 8300-2:2018 'Design of an accessible and inclusive built environment' to ensure they are suitable for people with reduced manual dexterity or visual impairment. [PM\_10\_20\_90]

5.1.5 Nameplates and numbers shall be fitted to all internal doors. See GDB Section 2.6 for signage. [PM\_10\_20\_90]

5.1.6 Reference shall be made to the CSB for any additional requirements such as access control or finger guards. [PM\_10\_20\_90]

## 5.2. Hinges and Locks

5.2.1 Hinges shall meet the requirements of BS EN 1935 - 'Building hardware. Single-axis hinges. Requirements and test methods'. [Pr\_30\_36\_36]

5.2.2 Door closers shall not impinge or affect the operation of the hinge. [Pr\_30\_36\_36]

5.2.3 Locks shall be as listed in Table 4 as one of the following types:

- a) Lever lock - suitable for use with lever handles, operated by key from outside and thumb-turn inside. Note: Teaching/flexible space locks shall not be lockable within the room. [Pr\_30\_36\_08]
- b) Dead lock - suitable for use without lever handles. Where used in double doors the slave leaf shall be fitted with flush bolts to top and bottom. [Pr\_30\_36\_08]
- c) Bathroom lock - lock that can be locked from the inside by turn or lever and can be released from outside by hexagon or star key (not coin-slot). [Pr\_30\_36\_08]
- d) Ergonomic lock - as bathroom lock but operable by users with limited dexterity. [Pr\_30\_36\_08]

5.2.4 Locking arrangements for examination stores shall comply with relevant exam board criteria given in the CSB. [PM\_10\_20\_82]

5.2.5 Emergency release locks shall be provided for toilet cubicle doors. [Pr\_30\_36\_08]

5.2.6 The emergency release function on locks shall be designed to limit operation to members of staff only. [Pr\_30\_36\_08]

5.2.7 Lock suiting shall be as defined in the GDB and the College's requirements in the CSB. [PM\_10\_20\_90]

5.2.8 The server and hub room(s) shall be secured via a lock and key, of a type that cannot be duplicated without authority. [Pr\_30\_36\_08]

5.2.9 Six keys shall be provided for each server and hub room upon handover (1 x network manager, 1 x technician, 1 x site manager, 1 x Disaster Recovery plan to be kept within the safe, and 2 x spare to be kept in a safe). [PM\_10\_20\_82]

5.2.10 If there is more than one door to the server and hub room(s), then both doors shall have suited locks so that a single key can open both doors. [PM\_10\_20\_82]

5.2.11 Suitable locking mechanisms shall be provided in accordance with sections 2.5.4.7, 2.6.4 and 2.14.2.16 of the GDB and Technical Annex 2C, being part of the suited physical key system, unless specified otherwise within the CSB. [Pr\_30\_36\_08]

### 5.3. Internal Door Closers

5.3.1 Door closers shall be provided in accordance with the doorset type specified in Technical Annex 1A or the College-specific ADS, or as required by the Fire Strategy for the Building. [PM\_10\_20\_90]

5.3.2 Door closers shall meet the requirements of BS EN 1154 - 'Building hardware. Controlled door-closing devices. Requirements and test methods', as well as the following additional requirements:

- a) Door closers shall incorporate an adjustable tensioner which is set such that the door provides optimum fire resistance and acoustic performance when closed. [Pr\_30\_36\_59\_15]
- b) Operating forces of the door closers shall be within the limit permitted in BS 8300 2:2018 'Design of an accessible and inclusive built environment'. [Pr\_30\_36\_59\_15]
- c) Delayed-action closers shall not delay the closing action more than that required for its use (for example, for the ease of disabled people). [Pr\_30\_36\_59\_15]
- d) Where the door closer is fitted to a fire door, this delay shall not exceed 25 seconds as specified in BS EN 1154 - 'Building hardware. Controlled door-closing devices. Requirements and test methods'. [Pr\_30\_36\_59\_15]
- e) Door closers fitted on fire doorsets on circulation routes shall incorporate electro-magnetic hold-open devices linked to (and compatible with) the automatic fire detection and alarm system. [Pr\_75\_30\_23\_27]

## 5.4. Electro-magnetic Hold-open Devices

5.4.1 Electro-magnetic hold-open devices shall not be fitted to doorsets required to be self-closing in order to provide privacy, such as doorsets to changing rooms. [PM\_10\_20\_82]

5.4.2 Electro-magnetic devices shall be provided on self-closing fire doors in halls and corridors. These shall release automatically as required by the Fire Strategy. [Pr\_75\_30\_23\_27]

5.4.3 Appropriate measures shall be included to prevent accidental impact with the leading edge of the door leaf, when in the open position to prevent the creation of a hazard. [PM\_10\_20\_82]

5.4.4 Edges of all doors that stand open shall contrast visually with the surrounds. [PM\_10\_20\_82]

5.4.5 Electro-magnetic hold-open devices shall meet the requirements of BS EN 1155 - 'Building hardware. Electrically powered hold-open devices for swing doors. Requirements and test methods'. [Pr\_75\_30\_23\_27]

## 5.5. Lever Handles

5.5.1 Lever handles on any doors shall meet the requirements of BS EN 1906 - 'Building hardware. Lever handles and knob furniture. Requirements and test methods' and shall be compatible with the locks with which they are to be used. [Pr\_30\_36\_59\_25]

5.5.2 Lever handles shall:

- a) have a diameter of between 19mm and 35mm [Pr\_30\_36\_59\_25]
- b) be offset from the door leaf by at least 45mm [Pr\_30\_36\_59\_25]
- c) be at least 95mm long [Pr\_30\_36\_59\_25]
- d) have a return end, and contrast with the door leaf by a minimum of 20 LRV points [Pr\_30\_36\_59\_25]
- e) shall have bolt-through fixings. [Pr\_30\_36\_59\_25]

## 5.6. Pull Handles

5.6.1 Pull handles on doors shall meet the requirements of BS 8424 - 'Building hardware. Pull handles. Requirements and test methods'. [Pr\_30\_36\_59\_64]

5.6.2 Pull handles shall:

- a) have a diameter of between 19mm and 35mm [Pr\_30\_36\_59\_64]
- b) be offset from the door leaf by at least 45mm, be at least 400mm long [Pr\_30\_36\_59\_64]
- c) contrast with the door leaf by a minimum of 20 LRV points [Pr\_30\_36\_59\_64]
- d) be located so their lower end is 1000mm above FFL or 1100mm above FFL if clashing with other door hardware [Pr\_30\_36\_59\_64]
- e) have bolt-through fixings. [Pr\_30\_36\_59\_64]

5.6.3 Pull type handles shall not be fitted to the push side of doors. [PM\_10\_20\_82]

## **5.7. Push Plates**

5.7.1 Push plates shall be provided to each door leaf on the face used to push the door open. [Pr\_30\_36\_33\_68]

5.7.2 Push plates shall be a minimum of 75mm x 500mm (minimum) in size. [Pr\_30\_36\_33\_68]

5.7.3 If a single push plate is not compatible with other hardware fitted to the door, two minimum 90mm width plates fitted above and below the lock position and shall be provided to protect to an equivalent extent. [Pr\_30\_36\_33\_68]

## **5.8. Finger Guards**

5.8.1 Finger guards shall be fitted to all doors in Independent Living, nursery or similar areas as defined in the CSB and ADS. [Pr\_30\_36\_36\_04]

5.8.2 Where new doors require finger guards, the guard mechanism shall be either built into the door and frame, with a rounded stile, or surface fixed to the door face and frame. In both cases they shall comply with Classification Class 2 as defined in Table 1, BS 8613:2017; Finger protection devices for pedestrian doors. [Pr\_30\_36\_36\_04]

5.8.3 Where retained or refurbished doors and frames require finger guards, an applied cover finger guard shall comply with Classification Class 2 as defined in Table 1, BS 8613:2017; Finger protection devices for pedestrian doors. [Pr\_30\_36\_36\_04]

5.8.4 The cover finger guard shall not affect the integrity of the doorset in terms of fire or acoustics. [Pr\_30\_36\_36\_04]

5.8.5 The proposed solution shall require minimal maintenance. [Pr\_30\_36\_36\_04]

5.8.6 See GDB Internal Elements and Finishes, Table 6 for Minimum Life Expectancy. [PM\_35\_10\_47]



<b>Ironmongery Sets</b>	<b>Type</b>	<b>Hinges: S-standard P-parliament</b>	<b>Finger guards required</b>	<b>Through-fix lever handles</b>	<b>Through fix vertical pull handle &amp; push plate</b>	<b>Locks (see 5.2.2): L-Lever locks, D-Dead lock, B-Bathroom, E-ergonomic</b>	<b>Staff-only access control System</b>	<b>Electromagnetic hold open device required with override in access restricted location</b>	<b>Closer required</b>
a	general	S	No	Yes	No	L	No	No	No
b	mainstream toilet	S	No	Yes	No	B	No	No	No
c	mainstream changing	S	No	No	Yes	D	No	No	Yes
d	accessible toilet	S	No	No	Yes	E	Yes	No	No
e	Early Years	S	Yes	Yes	No	L	Yes	No	No
f	circulation	S	No	No	Yes	D	No	Yes	Yes
g	lobby & stairs	S	No	No	Yes	None	No	No	Yes
h	halls & plant	S	No	No	Yes	D	No	No	No
k	sports hall	S	No	No	Yes, flush	D	No	No	No
m	special	S	Yes	Yes	No	L	Yes	No	No
n	special toilet	S	Yes	Yes	Yes	B	Yes	No	No

<b>Ironmongery Sets</b>	<b>Type</b>	<b>Hinges: S-standard P-parliament</b>	<b>Finger guards required</b>	<b>Through-fix lever handles</b>	<b>Through fix vertical pull handle &amp; push plate</b>	<b>Locks (see 5.2.2): L-Lever locks, D-Dead lock, B-Bathroom, E-ergonomic</b>	<b>Staff-only access control System</b>	<b>Electromagnetic hold open device required with override in access restricted location</b>	<b>Closer required</b>
o	special changing	S	Yes	No	Yes	D	Yes	No	Yes
p	parliament	P	No	Yes	No	L	No	No	No

**Table 4 Minimum Specification Requirements for Ironmongery**

<sup>1</sup>'Type' is a descriptor, it does not indicate all the areas to which the code applies.

## 6. Internal Stairs, Barriers, Balustrading and Guarding

### 6.1. Overview

6.1.1 All guarding provided shall meet the following requirements in addition to AD K and BS 6180:2011 'Barriers in and about buildings'.

- a) Guarding of walkways, or staircases with voids on both sides, shall be between a minimum of 1100mm high and a maximum of 1500mm high subject to the CSB and a risk assessment. [Ss\_25\_60\_05\_05]
- b) Any additional requirements for the height of guarding based on a risk assessment and specified in the CSB shall be met. [PM\_10\_20\_90]
- c) All safety glass shall meet the requirements of Section 6 in Annex 2D and paragraph 8.4.4 in Technical Annex 2B. [PM\_10\_20\_90]
- d) The design of stairs and handrails shall be coordinated so that handrails are continuous without vertical steps in the handrails. [Pr\_25\_30\_36]

6.1.2 The design and construction of all new stairs shall comply with the following requirements:

- a) All elements i.e., handrail height, colour and texture shall meet the needs of a wide range of disabilities, including reduced mobility and visual impairment, through compliance with AD M and adoption of the relevant guidance provided in BS 8300-2:2018. [EF\_35\_10]
- b) Materials for handrails/balustrades shall be self-finished. [Pr\_25\_30\_36]
- c) Materials shall be chosen to contrast with the background against which they can be viewed and shall not be highly reflective. [Pr\_25\_30\_36]
- d) The design of stairs and handrails shall be co-ordinated so that handrails are continuous without vertical steps in the handrails. [Pr\_25\_30\_36]
- e) Offset treads shall be provided to accommodate continuous handrails. [Pr\_25\_30\_36]
- f) The routing of Building Services through stairway enclosures shall be kept to a minimum. [PM\_10\_20\_82]

- g) Where routing of Building Services is unavoidable, the Contractor is to agree this with the Employer, and ensure their presence does not lower the required performance of the stairway, particularly in terms of sound insulation and fire resistance. [PM\_10\_20\_82]
- h) Where the gap between stair strings exceeds 200mm, measured at any point, the gap shall be treated as a void [PM\_10\_20\_82]
- i) Where a tread meets a wall, any gap shall be no greater than 25mm [PM\_10\_20\_82]
- j) Where wall-mounted heat emitters or lights are fitted in stairwells, they shall be robust and located so as not to obstruct use of the stair, the landings, the refuge or the designated escape route. [PM\_10\_20\_82]
- k) The wall-mounted heat emitters or lights shall also be easy to maintain, whilst preventing tampering by students. [PM\_10\_20\_82]
- l) Additional requirements identified in the CSB shall be provided. [PM\_10\_20\_90]
- m) A full height solid balustrade or partition to the centre of stairwells shall be installed only if required by the CSB. An additional handrail shall be provided to both sides of staircases at a height of 600mm (to the top of the handrail) above the nosing line of the stairs only if required by the CSB for mobility reasons. [PM\_10\_20\_82]
- n) The design and the materials (including any glass) used for all balustrades and guarding shall be as defined in BS 6180:2011 - Barriers in and about buildings and AD K. [PM\_10\_20\_90]
- o) Designs shall be certified by chartered structural engineers or BSI kitemark registered manufacturers. [PM\_10\_20\_82]
- p) Balustrade and barrier systems shall be installed by qualified accredited and certified installers. [Ss\_25\_60\_05\_05]
- q) Glass to balustrades and barriers and guarding shall be in accordance with BS 6180: 2011. [Ss\_25\_60\_05\_05]
- r) Glass to balustrades and barriers and guarding shall be laminated and toughened and fixed with bolt-through fixings when using an infill panel system. [Ss\_25\_60\_05\_05]

- s) The clear width of stairs shall be no narrower than the doors leading on to the stair enclosure as required by the Building Regulations. All doors leading to stair enclosures shall be double doors as required by Table 2 and shall achieve a minimum clear width of 1650mm. [EF\_35\_10]

6.1.3 Calculations shall be based on risk assessments for each project to determine the correct glass to use. [PM\_10\_20\_82]

## 7. Floors

### 7.1. Floor Structure

7.1.1 The following requirements shall be met in order to limit floor vibration and sound transmission.

- a) All floors shall consist of a composite concrete construction, or a construction that achieves at least the equivalent values for floor loading, floor vibration, acoustic and fire performance and has been agreed with the Employer. Alternative forms of construction shall have full certification to prove they are meeting the same values or better. [PM\_10\_20\_82]
- b) The dynamic deflection of all floors shall be limited to a minimum fundamental natural frequency of 5Hz or the floor structure shall be justified by other means (e.g., response factors or analysis as described in the SCI publication P354 - Design of Floors for Vibration: A New Approach). [PM\_10\_20\_90]
- c) Floors shall comply with BB93 Acoustic Design for Schools to identify flanking paths and provide appropriate acoustic isolation. [PM\_10\_20\_90]
- d) Roofs housing rooftop social/sport areas and MUGAs, upper floor sports halls and dance studios shall be designed to minimise structure borne vibration and airborne sound transmission to occupied rooms. The same approach shall be applied where halls are positioned at first floor level. [PM\_10\_20\_82]
- e) A specialist structural and acoustic report is required to prove there is adequate structural isolation and attenuation of sound and vibration. [PM\_10\_20\_82]

### 7.2. Floor Finishes

7.2.1 Floor finishes shall conform to the performance specifications in this Technical Annex and all British and European standards relevant to the material type, including:

- a) BS 8203 – ‘Code of practice for installation of resilient floor coverings’ [Pr\_35\_57\_71]
- b) BS EN 14041 – ‘Resilient, textile and laminate floor coverings. Essential characteristics’ [Pr\_35\_57\_71]

7.2.2 Where there is underfloor heating, floor finishes shall be able to withstand the effects of temperatures up to 27°C. [PM\_10\_20\_82]

7.2.3 Where vinyl, lino or other sheet material is to be used, the surface onto which the sheet is to be laid shall be free of surface irregularities to standard SR1 in BS 8203:2017 - 'Code of practice for installation of resilient floor coverings'. [Ss\_30\_42]

7.2.4 Trowel lines, adhesive comb lines, indentations, manufacturing and construction joints including volumetric module joints (excluding movement joints), or other irregularities shall not be visible or identifiable through the sheet covering. [Ss\_30\_42]

7.2.5 The floor finish shall be designed and constructed to reflect the activities taking place in the space it serves, and any particular needs of the College, in terms of:

- a) Cleanliness - all finishes shall, as a minimum, achieve a basic level i.e., be nonporous, reasonably joint free (ceramic tile with epoxy-based grout and carpet tiles are both acceptable), with smooth welds in sheet materials. Those rated 'high' within Table 5 shall have no dirt traps and shall incorporate coved skirting. [Ss\_30\_42]
- b) Smoothness - with minimal abrasion characteristics against the skin. [Ss\_30\_42]
- c) Sound absorption and transmission - ensuring good acoustic properties and performance; floor finishes shall be designed as a whole alongside other internal surfaces to achieve the performance criteria specified in BB93. [Ss\_30\_42]
- d) Impact resistance - shall resist indentations and marks and be co-ordinated with FF&E used within the space. [Ss\_30\_42]
- e) Colour and pattern - wayfinding and visual sensitivity. [Ss\_30\_42]
- f) Suitability for Mobility Equipment users and others with a physical disability or sensory impairment. [Ss\_30\_42]
- g) Having a low Volatile Organic Compounds (VOC) finish. [Ss\_30\_42]

7.2.6 Floor finishes shall be provided for each space as indicated in Table 5 and as specified in the College-specific ADS, unless (by exception) an alternative is required in the College-specific Brief (CSB). [Ss\_30\_42]

7.2.7 Floor finishes shall comply with the particular characteristics in Table 5 including:

- a) Slip resistance, ensuring minimal tripping hazards. [Ss\_30\_42]
- b) Chemical and heat resistance. [Ss\_30\_42]
- c) Static resistance, for example in the server room. [Ss\_30\_42]

- d) Area elastic performance of A3 or A4 in sports or activity spaces. [Ss\_30\_42]
- e) Durability, to BS EN ISO 10874: 2012 - 'Resilient, textile and laminate floor coverings'. [Ss\_30\_42]

7.2.8 Where retractable bleacher seating is provided, the floor finish shall be capable of carrying the weight of this equipment with special attention paid to sprung floor construction loading abilities and the point loads imposed by rollers used. [Ss\_30\_42]

7.2.9 Where retractable bleacher is provided, the floor finish shall be homogenous, if vinyl, and shall be capable of resisting wear associated with this equipment. [Ss\_30\_42]

7.2.10 Where timber floor finishes are provided, they shall be finished with a 2-pack polyurethane flexible lacquer/sealant (no acrylic mixes). [Ss\_30\_42]

7.2.11 Floor finishes shall meet the water resistance in Table 5; The three levels of water resistance are defined as follows:

- a) Water Resistance 1 - to withstand a reasonable degree of spillage and dampness from footwear etc. [Ss\_30\_42]
- b) Water Resistance 2 - to allow frequent spillage or wetting without damage, staining or absorption. Requirements for resilience are covered in BS EN 661 1995 - 'Resilient floor coverings. Determination of the spreading of water' and BS EN 662 1995 - 'Resilient floor coverings. Determination of curling on exposure to moisture'. [Ss\_30\_42]
- c) Water Resistance 3 - to allow regular wetting without damage, staining or absorption. Requirements for spreading of water covered in BS EN 661 1995 and BS EN 13553 for vinyl in wet areas. [Ss\_30\_42]

7.2.12 When a mixed floor finish is required in Table 5 (using letter 'm' in the ADS code) the level of water resistance applies to the larger area of carpet while the lino, rubber or vinyl finish around the sink and worktop should be Water Resistance 2 above. [Ss\_30\_42]

7.2.13 Floor finishes shall meet hygiene performance requirements in Table 5. [Ss\_30\_42]

7.2.14 Where a high level of hygiene is specified, it shall be readily cleanable and not retain odours. [Ss\_30\_42]



Floor Finishes	Description	Possible materials (to be agreed with Employer)  BS EN 14041:2004 Essential characteristics always apply for rubber or vinyl Fire and smoke resistance dependent on fire strategy  Min reflectance value (LRV)for all floors = 5%	Slip Resistance (Ramp test rating, or R value)	Slip Resistance Value (SRV) and surface roughness	BS EN 14041:2004 Electrostatic Rating	Heat Resistance	Area elastic (A3) sports floor to BS EN 14904:2006	BS EN ISO 10874:2012 European Flooring Use classification (for durability)
Type F1.1	general	in Colleges: general	Yes	No	No	No	Mode rate	N/A
Type F1.1h	special general	in Special Colleges: general	Yes	No	No	No	High	Suitable for wheelchairs, no transition strips
Type F1.1m	mixed general	shared teaching areas, staff rooms	Yes	No	No	No	Mode rate	Carpet to part of area as shown on FF&E layout; lino, rubber or vinyl around sinks etc

Type F2.1	stores	stores, server room	Yes	No	No	No	Mode rate	N/A
Type F3.2i	Classroom non-slip	nursery classrooms/ classbases	Yes	Yes	No	No	High	3x3m carpet mat (with weighted edging) on top of finish to part of area, as shown on FF&E layout
Type F3.4	chemical resistant non-slip	light practical spaces, chemical store, cleaners' store, dark room, reprographics	Yes	Yes	No	Yes	Mode rate	Suitable for heavy movable FF&E on castors
Type F3.4h	hygienic non-slip	food room, sick bay; kitchen staff and stores, hygiene room	Yes	Yes	No	Yes	High	Suitable for heavy movable FF&E on castors
Type F4.2h	dining	dining areas, serveries	Yes	Yes	No	No	High	SRV36 slip resistance in separate servery areas
Type F5.4	heavy practical	workshops, DT prep and engineering prep, kiln room, plant room	Yes	Yes	No	Yes	Mode rate	Suitable for heavy movable FF&E on castors

Type F6.1	multi purpose sport	sports hall, activity studio, dance studio, drama studio, fitness room	Yes	Yes	No	No	Mode rate	sports hall floor to accommodate suitable sports court markings
Type F6.2h	multi purpose hall	multi-purpose halls/large spaces	Yes	Yes	No	No	High	Suitable for movable bleacher seating where specified
Type F7.3h	wet area	changing rooms, showers, toilets, hygiene rooms, Changing Places rooms	Yes	Yes	Yes	Yes	High	Barefoot areas shall be' barefoot slip resistance category B'
Type F8.4h	kitchen	kitchen preparation area	Yes	Yes	No	Yes	High	N/A
Type F9.2	entrance	entrance lobbies	Yes	Yes	No	No	Mode rate	Barrier matting

**Table 5 Minimum Performance Requirements - Floor Finishes**

## 7.3. Barrier Matting

7.3.1 Barrier matting shall be provided at all external doors to assist with cleanliness of internal floor coverings. [Ss\_30\_60\_30\_26]

7.3.2 Draft lobbies to all external doors shall meet the requirements of AD M, Diagram 10 and shall be finished for their full length with barrier matting in the direction of travel, in compliance with BS7953 - 'Entrance flooring systems. Selection, installation and maintenance'. [Ss\_30\_60\_30\_26]

7.3.3 In entrances where high levels of ingress are expected (e.g., a main student entrance), the extent of barrier matting provided shall be based on an analysis of use. [Ss\_30\_60\_30\_26]

7.3.4 Barrier matting shall:

- a) not present a hazard to the user in normal use and not become slippery when wet [Ss\_30\_60\_30\_26]
- b) remove and retain moisture and dirt, preventing it being transferred to internal floor coverings [Ss\_30\_60\_30\_26]
- c) be of a 'heavy duty' type, catering for high flow rates at key times within the college day [Ss\_30\_60\_30\_26]
- d) be of a recessed type or adhered to the floor. Loose mats shall not be permitted. [Ss\_30\_60\_30\_26]
- e) not impede the movement of wheelchairs or non-ambulant building users. [Ss\_30\_60\_30\_26]

## 8. Ceilings and Soffits

### 8.1. Ceilings and Soffits Performance

8.1.1 Ceilings and soffits shall be smooth and free from holes. [Ss\_30\_47]

8.1.2 Service penetrations shall be neat and tidy. [Ss\_30\_47]

8.1.3 Ceilings or soffits shall conform to the specifications indicated in Table 6 for each space, to match the relevant code in Technical Annex 1A or the College-specific ADS. [PM\_10\_20\_90]

8.1.4 Moisture resistant ceilings shall be installed in areas such as kitchens, changing rooms, showers and toilets. [Ss\_30\_47]

8.1.5 Ceiling finishes shall have:

- a) fire and smoke resistance and fire classification for linings dependent on Fire Strategy. [PM\_35\_30]
- b) acoustic treatment dependent on Acoustic Strategy. [PM\_35\_60]
- c) min reflectance value (LRV) for all ceilings = 70% [Ss\_30\_47]

<b>Code</b>  First digit: type, grid, monolithic, exposed soffit  Second digit: hygrothermal letters	<b>Area</b>	<b>Description</b>	<b>Construction</b>	<b>Hygrothermal performance</b>
Type C1.1	all areas not subject to humid/wet conditions or high hygiene requirements	general	clipped, grid ceiling or exposed soffit with rafts and/or exposed services	normal
Type C1.2	food room, kitchen	humid areas	clipped, grid ceiling	humid

<b>Code</b>  First digit: type, grid, monolithic, exposed soffit  Second digit: hygrothermal letters	<b>Area</b>	<b>Description</b>	<b>Construction</b>	<b>Hygrothermal performance</b>
	preparation areas, kitchen staff and food stores, kitchenettes, cleaners' stores,		with no exposed services below, including M&E ductwork	
Type C2.1	Any general residential areas, as captured in the CSB	residential	as described in CSB	as described in CSB
Type C2.2	toilets and changing rooms	humid areas	monolithic ceiling with no exposed services or clipped, grid ceiling	humid
Type C2.3	showers, hygiene	wet areas	monolithic ceiling with no exposed services	wet
Type C3.2	plant rooms	humid areas	exposed soffit with exposed services	humid

**Table 6 Minimum Performance Requirements - Ceiling Finishes**

8.1.6 Ceilings for unsupervised spaces such as WC and shower cubicles shall be continuous and monolithic or suspended with clips to keep tiles in place and to prevent unauthorised access. [Ss\_30\_47]

8.1.7 Ceilings in areas that are supervised such as changing rooms and wash hand basin areas can be suspended, subject to moisture resistance criteria being satisfied. [Ss\_30\_47]

8.1.8 All kitchen preparation areas shall withstand pressure washing. [PM\_10\_20\_82]

8.1.9 Where suspended ceilings are designed, specified and installed they shall:

- a) be level and flush at joints [Ss\_30\_47]
- b) adequately secured [Ss\_30\_47]
- c) provide surface spread of flame performance in accordance with the relevant statutory codes [Ss\_30\_47]
- d) not be readily damaged by impact or be easily defaced [Ss\_30\_47]
- e) use insulation that is non-combustible, where provided [Ss\_30\_47]
- f) be easily levelled following access. [Ss\_30\_47]

8.1.10 Where ceiling-mounted hoists, physiotherapy equipment or ceiling mounted A/V equipment is provided:

- a) tracking or fixing shall be coordinated with other ceiling services [Ss\_30\_47]
- b) structure is required to support the equipment and any person using the equipment. [Ss\_30\_47]

8.1.11 Ceilings in Hygiene and Changing Places rooms shall be homogeneous with recessed light fittings, unless specified otherwise in the CSB. [Ss\_30\_47]

## 9. Decorations and Finishes

### 9.1. Decorations and Finishes Performance

9.1.1 Where wall finishes are provided, they shall conform to the specifications listed in Table 7, to match the relevant code in Technical Annex 1A or the College-specific ADS. [PM\_10\_20\_90]

9.1.2 The minimum surface reflectance levels are to be as follows.

a) Walls: 50%. [Ss\_25\_45]

b) Painted exposed soffits and ceilings in new or existing areas: 70%. [Ss\_30\_47]

c) Floors: 5%, and not higher than 40% to avoid scuff marks. [Ss\_30\_20]

9.1.3 Daylight and visual amenity calculations, as required in the DfE's EIR, shall include Light Reflectance Values for the actual floor finish chosen and for horizontal reflective surfaces, which can be of higher reflectance than the floor. [PM\_40\_20\_21]

9.1.4 Where analysis is undertaken in relation to daylight (see Technical Annex 2E), 70%/50%/5% reflectance shall be used, unless alternatives are agreed with the Employer at the time of the design. [PM\_40\_20\_21]

9.1.5 Floor reflectance and desk reflectance can be combined for daylight calculations; however, the combined reflectance for a carpeted room shall not exceed 20%. [PM\_40\_20\_21]

9.1.6 The 60° gloss factor for surface finishes of windowsills, furniture and flooring shall be less than 15%. [PM\_10\_20\_82]

9.1.7 Gloss factor information shall be sourced from the manufacturers of the windowsills, furniture or floor coverings. [PM\_10\_20\_82]

9.1.8 The levels of brightness on ceiling and walls shall provide adequate visual comfort as specified in Technical Annex 2E. [PM\_10\_20\_90]

9.1.9 Light Reflectance Values shall comply with the requirement for 30 percentage points of difference in contrast between foreground and background for visual orientation of students with visual impairments, in accordance with AD M. [PM\_10\_20\_90]

9.1.10 Appropriate risk assessments and method statements shall be prepared and submitted to the Employer for all paints and coatings to ensure the safety of students, staff,



visitors and operatives who may be exposed to solvents and to water-borne and solvent-borne materials. [PM\_80\_60\_50]

9.1.11 Where water-borne paints are used within reach of students there shall be a minimum requirement for the wall paints to be tested under BS EN 13300 - 'Paints and varnishes. Water-borne coating materials and coating systems for interior walls and ceilings.' [PM\_10\_20\_90]

9.1.12 The decorations and finishes in circulation spaces shall be:

- a) robust enough to withstand the normal daily impact of students' personal belongings [Ss\_40\_90\_60]
- b) robust enough to withstand regular cleaning [Ss\_40\_90\_60]
- c) waterborne unless the use of solvent-borne finishes for particular uses is agreed with the Employer [Ss\_40\_90\_60]
- d) to an acceptable finish without the need to carry out works to the full wall (for example by splitting up corridor lengths into manageable bays with dado rails, movement joints, expressed joints etc.) or by providing a type of finish which allows for small areas to be repainted without affecting the overall appearance of the wall. [Ss\_40\_90\_60]

9.1.13 Where Table 7 requires a 'heavy duty' finish this shall apply to surfaces up to at least a height of 1.5m. [PM\_10\_20\_82]

9.1.14 'Heavy duty' finishes shall be easy to clean and capable of achieving the minimum decoration cycle of 5 years before first repaint, as Table 6 in the Generic Design Brief. [PM\_10\_20\_90]

9.1.15 The minimum expected standard of performance of the wall finish in 'heavy duty' areas shall be one of the following:

- a) Dulux, Crown or Johnstone's: high performance, durable trade acrylic eggshell [Ss\_40\_90\_60]
- b) single pack clear or coloured protective performance coating or single pack protective performance glaze over the manufacturer's approved base [Ss\_40\_90\_60\_85]
- c) flush-pointed, fair faced architectural blockwork [Pr\_20\_93\_52\_01]
- d) an approved durable high-performance wall finish [Ss\_25\_45]

e) a trade high performance easily cleanable durable acrylic matt finish (only by exception and if agreed with the Employer). [Ss\_40\_90\_60]

9.1.16 Exposed corners or columns in heavy duty areas shall be protected with uPVC or stainless-steel corner guards. [Pr\_35\_90\_43\_15]

9.1.17 Where there are graphics on the wall, transparent corner guards shall be used. [Pr\_35\_90\_43\_15]

9.1.18 Where waterborne paints are used within reach of students there shall be a minimum requirement for the wall paints to gain a class 1 classification using the BS EN ISO 11998 - 'Paints and varnishes. Determination of wet-scrub resistance and cleanability of coatings' test method or a class C classification using the BS 7719 - 'Specification for waterborne emulsion paints for interior use' test method. [Ss\_40\_90\_60\_95]

9.1.19 Normal duty finishes (i.e., those not classed as 'heavy duty') shall be finished in a minimum of a trade high performance matt acrylic paint. [Ss\_40\_90\_60]

9.1.20 All colours shall be agreed with the College. [Ss\_40\_90\_60]

9.1.21 Brilliant white shall be avoided in circulation areas including stairs and replaced with either an off-white, or a colour agreed with the College. [Ss\_40\_90\_60]

9.1.22 Kitchens and food rooms shall be finished in high performance eggshell antibacterial paint. [Ss\_40\_90\_60]

9.1.23 Areas requiring frequent cleaning in kitchen food preparation areas shall be finished in smooth white uPVC, stainless steel or similar approved easy clean sheet materials. [Ss\_25\_20]

9.1.24 Where Table 7 identifies the hygrothermal performance as humid or wet, mould resistant finishes shall be used. [PM\_10\_20\_90]

9.1.25 No products shall be used that require excess paint or solvent used in cleaning to be disposed of at a hazardous waste site. [PM\_10\_20\_82]

9.1.26 All empty cans shall be recycled using the appropriate recycling scheme through the applicable paint merchant. [PM\_10\_20\_82]

9.1.27 In Table 7, there are three levels of finish specified, which are defined as follows:

- a) Finish 1 - impervious - able to resist the penetration of water, solutions containing detergents, disinfectants and other liquids likely to be encountered in college buildings. [PM\_10\_20\_82]

- b) Finish 2 - jointless/flush impervious joints - without joints or having joints that are sealed by methods which make the whole surface impervious and prevent the collection of dirt and bacteria. [PM\_10\_20\_82]
- c) Finish 3 - smooth - no coarser than brush-applied matt emulsion paint on a flat plastered surface without projections, indents or holes part-way through the material. [PM\_10\_20\_82]

9.1.28 Reference shall be made to the CSB for any additional requirements for students with SEND e.g., colour, texture, pattern, light reflectance values etc. [PM\_10\_20\_90]

9.1.29 Walls shall be finished with min 100mm skirtings at the base of the wall. [PM\_35\_10\_60]

9.1.30 Skirtings shall be:

- a) smooth and rigid with a hard-wearing, cleanable finish [PM\_35\_10\_60]
- b) continuous with the floor finish and shall not impede cleaning regimes, where floors are subject to wetting, either in use or in cleaning [PM\_35\_10\_60]
- c) made and finished to minimise the appearance of scuffs scratches and chips. [PM\_35\_10\_60]

## 9.2. Splashbacks

9.2.1 Where sanitaryware does not have an integral splashback, splashbacks shall be provided. [Pr\_40\_20\_76\_83]

9.2.2 A splashback or an upstand shall be provided to a minimum height of 300mm above all basins, wash troughs, and sinks. [Pr\_40\_20\_76\_83]

9.2.3 A splashback or an upstand shall be provided to a minimum height of 1200mm above all cleaners' sinks. [Pr\_40\_20\_76\_83]

9.2.4 A splashback shall be formed from water resistant, cleanable, and durable materials. [Pr\_40\_20\_76\_83]

9.2.5 Splashbacks (ceramic tiles or uPVC sheet cladding) shall be provided around electric hand driers to prevent water damage and staining to the wall surface. [Pr\_40\_20\_76\_83]

9.2.6 The splashback shall extend 300mm to each of 3 sides of the hand drier and down to the skirting level. [Pr\_40\_20\_76\_83]

9.2.7 Wall finishes shall have:

- a) fire and smoke resistance and fire classification for linings dependent on fire strategy [PM\_35\_30]
- b) acoustic treatment dependent on Acoustic Strategy [PM\_35\_60]
- c) min reflectance value (LRV) for all walls = 50%. [PM\_10\_20\_82]

<b>Type</b>  First digit: impervious, jointless, smooth  Second digit: hygrothermal 1-3  Letters: h – heavy duty	<b>Area</b>	<b>Description</b>	<b>Finish 1 – impervious</b>	<b>Finish 2 – Jointless/flush impervious joints</b>	<b>Finish 3 – smooth</b>	<b>Hygrothermal performance</b>	<b>Heavy Duty</b>
Type W1.1	all areas not subject to humid/ wet conditions, high hygiene requirements or heavy-duty finish, including classrooms	general	N/A	N/A	Yes	Normal	N/A
Type W1.1h	light practical spaces, indoor PE spaces, drama studios, social areas, entrance/ reception areas	heavy duty	N/A	N/A	Yes	Normal	Yes
Type W2.1h	science laboratories and studios, science prep rooms, main	science	Yes	N/A	Yes	Normal	Yes

<b>Type</b>  First digit: impervious, jointless, smooth  Second digit: hygrothermal 1-3  Letters: h – heavy duty	<b>Area</b>	<b>Description</b>	<b>Finish 1 – impervious</b>	<b>Finish 2 – Jointless/flush impervious joints</b>	<b>Finish 3 – smooth</b>	<b>Hygrothermal performance</b>	<b>Heavy Duty</b>
	halls, dining and sandwich areas						
Type W2.2h	cleaners' stores, kitchen staff and food stores, toilets, changing rooms, chemical stores	Humid areas and toilets	Yes	N/A	Yes	Humid	Yes
Type W3.2	food room, kitchen preparation, Medical (MI) treatment room, sick bay, kitchenettes	Humid	Yes	Yes	Yes	Humid	N/A
Type W3.3	showers	Wet Areas	Yes	Yes	Yes	Wet	N/A
Type W4.1	all areas not requiring a	Rough	N/A	N/A	No	Normal	N/A

<b>Type</b>  First digit: impervious, jointless, smooth  Second digit: hygrothermal 1-3  Letters: h – heavy duty	<b>Area</b>	<b>Description</b>	<b>Finish 1 – impervious</b>	<b>Finish 2 – Jointless/flush impervious joints</b>	<b>Finish 3 – smooth</b>	<b>Hygrothermal performance</b>	<b>Heavy Duty</b>
	smooth wall finish, such as workshops and DT prep rooms, plant rooms						
Type W5.1h	circulation, corridors	Circulation	N/A	Flush-pointed fair faced architectural blockwork acceptable	Flush- pointed fair faced architectural blockwork acceptable	Normal	Yes
TypeW6.1h	sports halls (up to 3.2m above FFL)	Sports	N/A	Average flush pointed painted blockwork acceptable	Average flush pointed painted blockwork acceptable	Normal	N/A

**Table 7 Minimum Performance Requirements - Wall Finishes**

## 9.3. Application of Finishes

9.3.1 High performance primers shall be used on corner edge beading of plastered walls. [PM\_10\_20\_82]

9.3.2 The dry wall sealing primer coat to all plasterboard walls shall be applied by the painting sub-contractor, not the plastering contractor. [PM\_10\_20\_82]

9.3.3 Paint finish specifications shall be certified as suitable by the paint manufacturer and shall be accompanied by full manufacturers' paint specifications. [PM\_10\_20\_82]

9.3.4 Manufacturers' specifications for day-to-day cleaning and the removal of graffiti and more stubborn marks shall be included in the Building Users Guide and shall include the types of sponges, cloths or wipes and solvents that can be used. [PM\_10\_20\_82]

9.3.5 Manufacturers' specifications shall include instructions for the repair of damage (such as gouges and scratches) and loss of sheen due to cleaning stubborn marks. [PM\_10\_20\_82]

9.3.6 The finishing schedules shall include mist-out and bring forward filled areas. [PM\_10\_20\_82]

9.3.7 The mist or primer coat shall be a suitable product to complement the topcoats in-line with manufacturers' guidelines for standard plasterboard substrates or a fully dry board and skimmed surface. [PM\_10\_20\_82]

9.3.8 PVA shall not be used to seal plasterboard surfaces for painting. [PM\_10\_20\_82]

9.3.9 In refurbishment projects, where surface spread of flame needs to be controlled, for example by providing a Class O fire rating, a flake test shall be carried out by the paint manufacturer to determine if the fire resistance of the paint finish requires a specialist flame retardant coating system to be applied. [PM\_35\_30\_28]

9.3.10 Paint shall not be applied when the ambient or substrate temperature is below 8°C. [PM\_10\_20\_82]

9.3.11 The temperature and humidity level of the substrate shall be tested before paint application and the results recorded. [PM\_10\_20\_82]

9.3.12 Painting shall not take place if the substrate temperature or humidity level is below the manufacturer's recommendations. [PM\_10\_20\_82]

9.3.13 Sample rooms shall contain benchmark paint finishes and shall be approved by the manufacturer and the Employer. [PM\_10\_20\_82]



9.3.14 The manufacturer shall also be asked to carry out programme checks during paint application. [PM\_10\_20\_82]

# 10. Signage

## 10.1. Overview

10.1.1 The main site entrance sign shall detail the name of the College and other pertinent information. The sign shall be of a design that allows for the incorporation of changes when necessary. [EF\_40\_10]

10.1.2 External directional signage provided shall be consistent and clearly visible, especially for visitors, giving clear directions. [EF\_40\_10]

10.1.3 The signage shall be capable of alteration where appropriate, whilst preventing the opportunity for tampering. [EF\_40\_10]

10.1.4 External building signage to main entrances (either façade or canopy mounted) shall be clearly visible. [EF\_40\_10]

10.1.5 Wayfinding strategy to be put in place and actioned as defined in the CSB. [EF\_40\_10]

10.1.6 Signage shall be provided for every room and space as detailed in the ADS, denoting its name or purpose and its agreed number. [EF\_40\_10]

10.1.7 Signage shall identify suites (of spaces), such as Departments. [EF\_40\_10]

10.1.8 See Section 4.1 for requirements for the identification of fire rated doorsets. [EF\_40\_10]

10.1.9 Sign surfaces shall be sufficiently hard to resist impact from hand-held objects without any noticeable change to the surface appearance. [EF\_40\_10]

10.1.10 Surfaces shall resist abrasion from cleaning and maintenance regimes without any noticeable change in surface appearance. [EF\_40\_10]

10.1.11 All fixings used shall be suitable for their intended purpose and shall be in accordance with the manufacturer's recommendations. [EF\_40\_10]

# 11. Demonstrating Compliance

## 11.1. Overview

11.1.1 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]

## 12. References

12.1.1 Take account of the following reference standards (or updated documents if relevant) or guidance.

- a) DD171:1987 - 'Guide to specifying performance requirements for hinged or pivoted doors (including test methods)'. [FI\_70]
- b) BS EN ISO 717 - 1:2013 - 'Acoustics. Rating of sound insulation in buildings and of building elements'. [FI\_70\_85]
- c) BS EN 12400:2002 - 'Windows and pedestrian doors. Mechanical durability. Requirements and classification'. [FI\_70\_85]
- d) BS EN 1192:2000 - 'Doors. Classification of strength requirements'. [FI\_70\_85]
- e) BS EN 1634-3:2004 - 'Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware. Smoke control test for door and shutter assemblies'. [FI\_70\_85]
- f) BS EN 1294:2000 - 'Door leaves. Determination of the behaviour under humidity variations in successive uniform climates'. [FI\_70\_85]
- g) BS EN 60839-11-1:2013 - 'Alarm systems. Access control systems for use in security applications. System requirements'. [FI\_70\_85]
- h) BS EN 10874:2012 - 'Resilient, textile and laminate floor coverings'. Classification'. [FI\_70\_85]
- i) BS EN 14904:2006 - 'Surfaces for sports areas. Indoor surfaces for multi-sports use. Specification'. [FI\_70\_85]
- j) BS 6180: 2011: 'Barriers in and about buildings'. [FI\_70\_85]
- k) BS8300-2:2018: 'Design of an accessible and inclusive built environment'. [FI\_70\_85]



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