



COOP LIVE

L20 - INTERNAL DOORS/DOORSETS AND DOOR ASSEMBLIES

© 2020 POPULOUS

Project Name: COOP LIVE
Drawing Number: BRA-POP-ZZ-ZZ-SP-A-7065
Document Title: L20 - INTERNAL DOORS/DOORSETS AND
DOOR ASSEMBLIES/HATCHES
Status: ISSUED FOR RIBA STAGE 4B
Revision: P03

COOP LIVE

DOCUMENT REVISIONS

Revision	Date	Prepared By	Approved By	Issue status
P00	11/05/2020	PG	DS	ISSUED FOR DRAFT RIBA STAGE 4A (T1)
P01	03/07/2020	FD	PG	ISSUED FOR RIBA STAGE 4A
P02	10/05/2021	HR	PG	ISSUED FOR RIBA STAGE 4B
P03	14/06/2021	HR	PG	ISSUED FOR RIBA STAGE 4B UPDATE

Co-op Live

Project Number: 4933

Document Title: Specification (RIBA Stage 4B)

Tender 4B Update

14/06/2021

Populous

L20 INTERNAL DOORS/DOORSETS AND DOOR ASSEMBLIES	1
GENERAL	1
110 WORKS INCLUDED	1
111 APPLICABLE DESIGN RESPONSIBILITY	1
112 TENDER SUBMITTALS	1
113 SAMPLES	2
114 MOCK-UPS, PROTOTYPES AND QUALITY BENCHMARKS	2
115 TESTING	2
PRODUCTS	3
210 PERFORMANCE REQUIREMENTS	3
211 TIMBER DOORS	5
212 SPECIALIST TIMBER DOORS	8
213 METAL DOORS	12
214 GLAZED DOORS	13
215 HATCHES	14
216 TIMBER FIRE DOORSETS	15
217 DOOR LEAVES	15
218 DOOR FRAMES	16
219 SEALS	17
220 LEATHER	17
221 FABRICATION	18
222 TOLERANCES	18
223 FINISHES	18
EXECUTION	19
310 INSTALLATION	19
311 FIXINGS	20
312 INSTALLATION TOLERANCES	20

L20 INTERNAL DOORS/DOORSETS AND DOOR ASSEMBLIES

GENERAL

110 WORKS INCLUDED

1. Scope of Works: This section of the Specification, when read in conjunction with the Design Drawings, provides particular requirements with respect to the following:
 - a. Internal timber doors.
 - b. Internal metal doors.
 - c. Internal glazed doors.
2. Particular Interfaces
 - a. Complete the Detailed Design of all interfaces with adjoining trades prior to commencement of manufacture.
 - b. Ensure that all interfaces are fully co-ordinated prior to commencement.
3. Related Documents and Sections: Examine the Design Drawings and the Contract Documents for requirements that directly affect or are affected by Work of this Section. Other Documents and Sections that directly relate to work of this Section include, but are not limited to:
 - a. The Preliminaries, general provisions of the Contract, including General and Supplementary Conditions, and Architectural General Requirements Specification Sections.

111 APPLICABLE DESIGN RESPONSIBILITY

1. Design & Build Procurement Routes
 - a. Refer to and comply with requirements defined within Section A of the Specification defining the Contractor's design responsibility for this element of the works. Complete the Detailed Design of this element of the works using an appointed or novated design team.

112 TENDER SUBMITTALS

1. Tender Response
 - a. Provide tender submittals in accordance with the requirements of SUBMITTALS clauses of the A Section of the Specification.
 - b. Submit a design response with the Tender proposal, to include all profiles of typical conditions, with dimensions.
 - c. The Tender response shall include:
 - 1). Samples where specified.
 - 2). List of Tests included.
 - 3). QA/ QC programme.
 - 4). List of proposed Working Drawings.
 - 5). Summary of deviations from the Specification.
 - 6). Outline technical specifications reflecting proposed materials/ systems, etc.

- 7). A list of proposed suppliers and sub-contractors intended to be used.

113 SAMPLES

1. Pre-contract Samples: Sufficient samples of the following, including relevant trade literature and technical specifications, shall be provided in accordance with SUBMITTALS clauses of the A Section:
 - a. 300mm x 300mm of each type of door.
 - b. Door frame minimum 300mm of each type.
 - c. Samples of fire and smoke seals.
 - d. Samples of acoustic seals.
 - e. Samples of glazing materials.
2. Post Contract Samples: In accordance with SUBMITTALS clauses of the A Section, post contract samples of the following shall be provided:
 - a. 300mm x 300mm samples of all doors forming the acceptable control samples for the project.
 - b. Door frame minimum 300mm of each type.
 - c. Samples of fire and smoke seals.
 - d. Samples of acoustic seals.
 - e. Samples of glazing materials.

114 MOCK-UPS, PROTOTYPES AND QUALITY BENCHMARKS

1. Mock-ups: Provide mock-ups in accordance with SUBMITTALS clauses of the A Section as follows:
 - a. Not required.
2. Prototypes: A prototype shall be provided in accordance with SUBMITTALS clauses of the A Section as follows:
 - a. Not required.
3. Benchmark Requirements: The following quality benchmarks shall be provided in accordance with SUBMITTALS clauses of the A Section:
 - a. An area determined by the Architect of each element of the works fully installed, completed and accepted by the Architect.

115 TESTING

1. Testing Requirements
 - a. Provide certification to demonstrate that doors and frames have been previously tested to meet the requirements of the Specification.
 - b. Where applicable, doorsets shall have test evidence for the following:
 - 1). BS EN 1192: External and internal doors.
 - 2). BS EN 14351: Part 2: Non fire and/or smoke resistant internal doors.
 - 3). BS EN 1634: Part 2: Fire door hardware.
 - 4). BS EN 1634: Part 3: Smoke control doors.

- c. Test certificates shall not relieve the Contractor of his responsibilities regarding the performance and service life requirements of the doors and frames.
 - d. If test certificates are not made available, include for the testing of doorsets.
2. Testing Altered Certified Doors
- a. Superimposed Linings/Finishes Applied to Certified Doorsets / Door Assemblies
 - 1). The addition of any applied/superimposed finish to a certified doorset / door assembly potentially affects/alters its performance in the event of conflagration, and therefore both commercial and programme allowance shall be made for system-specific destructive fire testing for each variant doorsets or door assembly with superimposed finishes over and above/in excess of those stated within the manufacturer's fire performance certification.
 - 2). Desktop assessments alone shall not be deemed to be adequate unless explicitly accepted by the Fire Officer.

PRODUCTS

210 PERFORMANCE REQUIREMENTS

- 1. Comply with the general performance of PERFORMANCE REQUIREMENTS AND DATA clauses of the A Section and the following specific performance requirements.
- 2. Security
 - a. All external and façade elements such as doors, shutters and the like shall effectively mitigate threats and provide effective resistance to intruders and thus have a minimum security rating of B3 to LPS 1175 Issue 8 (equivalent to SR2 to LPS 1175 Issue 7).
 - b. Doors shall be compatible with remote locking/electronic access control systems (EACS) and be capable of accepting electronic retraction bolt emergency egress bar as well as overhead power operation/power assist mechanism.
 - c. Emergency escape doors shall be capable of receiving 3-point locking with quick-release on the internal face and conform to BS EN 1125.
- 3. Strength of Doors and Frames
 - a. Ensure that the works, including ironmongery, meet the 'heavy duty' category as defined in BS EN 1192 or an equivalent international standard.
 - b. Provide evidence to demonstrate that the works, including ironmongery, have been tested to meet the minimum acceptance criteria stated in BS EN 1192 for the following:
 - 1). Slamming shut impact.
 - 2). Slamming open impact.
 - 3). Heavy body impact.
 - 4). Hard body impact.
 - 5). Torsion.
 - 6). Download deformation.
 - 7). Closure against obstruction.
 - 8). Resistance to jarring and vibration.

- 9). Abusive forces on door handles.
- c. Glass in doors:
 - 1). Comply with BS 6262.
 - 2). Impact performance to achieve class A (class 1B1) to BS 6206 and BS 6206.
- 4. Acoustics
 - a. Comply with the Acoustic Report/ acoustic performance requirement drawings.
 - b. Test reports shall be provided demonstrating that all doors installed requiring to be sound rated meet the minimum required level of acoustic reduction.
 - c. Sound-rated doors shall be provided with frames as specified. The frames shall be sealed into the partition opening, such that there is no noise leakage around the frame.
 - d. Sound-rated doors shall be supplied complete with perimeter (including threshold) seals and ironmongery to ensure that the seals operate effectively. No light shall be visible on either side of the doorset when viewed in darkness with a light source on the other side.
 - e. Open keyholes and other openings shall not occur in sound-rated doorsets.
 - f. Doors shall close quietly without 'slamming noise'. The maximum sound level caused by door operation shall be 68dB (audible), as measured at 1m from both faces of the door with a sound level meter set to 'F' (fast) in response.
 - g. If required by the Architect, Site sound transmission loss tests shall be carried out in accordance with BS EN ISO 10140. A test report demonstrating that doors installed within partitions requiring to be sound rated meet the performance criteria specified for the partition as specified shall be provided.
- 5. Fire
 - a. Comply with the Fire Strategy Report/ fire performance requirements drawings and all applicable provisions in the Building Regulations, whilst giving full consideration to the principles set out in BS 9991/ BS 9999.
 - b. Doors and Door Frames Generally: The door assemblies, including the installation method within door openings, shall comply with the following fire rating requirements:
 - 1). Door assemblies within openings, including ironmongery (refer to Section P21), shall achieve the fire rating indicated on the "Door and Ironmongery Schedule" and shall be independently tested to the relevant parts of BS 476 or BS 1634: Part 1 or assessed under the TRADA Quality Assurance Services Ltd. "Fire Resisting Doors and Doorsets Quality Assurance Scheme". Doors shall be marked with an identifying label and plug, in accordance with the scheme. Copies of test certificates or assessments shall be provided for inspection.
 - 2). Copies of test certificates shall be provided to the Architect prior to manufacture.
 - 3). All finishes shall satisfy Class 0 surface spread of flame in accordance with the requirements of Building Regulations and the requirements of the Building Control Officer and, unless otherwise specified, indicated or agreed.
 - 4). Fire doors and frames including fire seals and all associated materials and installation shall comply with the requirements of BS 8214 and BS EN 16034.

- 5). Fire safety signs shall comply with BS 3864 and shall be stainless steel discs 75mm diameter and set with their face flush with the door surface. Signage shall be as indicated on the Door and Ironmongery Schedules.
 - 6). Provide independently certified evidence that all specified variants of components comply with specified performance requirements.
6. Environmental
- a. Hygrothermal Performance
 - 1). All materials, core materials, lippings, facing materials and adhesives and preservative requirements for timber doors and associated works shall be selected to satisfy the design life requirements for the environmental conditions as specified in Section A. Refer to the Services Engineer's Documentation for detailed data.
 - 2). All adhesives, fixings and associated elements of the works shall have moisture resistant properties to match core materials.
7. Operation:
- a. Opening Pressures: Ensure that the maximum opening pressures required to open fire rated or non-fire rated doors on disabled access routes are in accordance with the requirements of BS 8300: Part 1 and BS 8300: Part 2.
 - b. Doors shall have automated operation where the maximum opening force allowable by Part M of the Building Regulations is exceeded, i.e. 30N at the leading edge from closed (0° position) to 30° open position and 22.5N at the leading edge from 30° to 60° open position.
8. Sustainability
- a. Refer to Section A.600 series SUSTAINABILITY clause, determine and evaluate the applicability of the specified requirements including BREEAM Credit Requirements to the works specified in this Section of the Specification. Comply with all relevant requirements.

211 TIMBER DOORS

1. Type DRS-101 Internal Timber Hinged Doorset - Painted (FR)
 - a. A performance certified internal flush fire rated side hung doorset, factory primed and finished.
 - b. Size and configuration: As shown on the Door Schedule/ Design Drawings.
 - c. Conformance: BS 644, BS EN 14221, BS EN 16034 and BS 8214.
 - d. Specific Performance:
 - 1). Duty rating: Heavy.
 - 2). Fire performance: Up to 60 minutes.
 - 3). Acoustic performance: Refer to the Acoustic Report/ Door Schedule.
 - e. Door leaf:
 - 1). Type: Manually deployed side hung hinged door leaf(ves).
 - 2). Solid laminated timber/flaxboard core, 54mm minimum thickness.
 - 3). Provide compliant grounds in the head rail for concealed transom overhead closers.

- 4). Lippings: Concealed hardwood lippings to all edges.
- 5). Finish: Factory priming and finishing applied to a kraft paper overlayment.
- f. Frame:
 - 1). Type: Rebated profile, split frame to satisfy the wall/ partition depth, complete with architrave.
 - 2). Material: Hardwood fully compliant with the qualitative and sustainability criteria stipulated within Section A of the Specification.
 - 3). Finish: Factory primed and finished with pigmented air cured lacquer.
- g. Seals: Intumescent smoke and/or acoustic seals to be of a type on which the manufacturer's certification is based.
- h. Architectural hardware:
 - 1). A concealed transom closers whereupon the manufacturer shall be required to demonstrate that they have relevant and current certification for any fire performing doorsets with this detail.
 - 2). Refer to Section P21 of the Specification.
- i. Indicative Product:
 - 1). Manufacturer: ~~F R Shadbolt & Sons Ltd~~ [Lloyd Worrall Architectural Solutions](#), ~~or acceptable equivalent~~.
 - 2). Reference: ~~To be confirmed~~ [Interspec Doorsets](#).
2. Type DRS-103 Internal Timber Hinged Doorset - Painted (FR+)
- a. A performance certified internal flush fire rated side hung doorset, factory primed and finished. This doorset shall generally be as Type DRS-101 Doorset except that it shall have enhanced fire performance of 90/ 120 minutes.
3. Type DRS-111 Internal Timber Hinged Doorset - Painted (FR, AR)
- a. A performance certified internal flush fire rated side hung doorset, factory primed and finished. This doorset shall generally be as Type DRS-101 Doorset except that it shall have enhanced acoustic performance as indicated on Acoustic Report.
4. Type DRS-115 Internal Timber Hinged Oversized Doorset - Painted (FR)
- a. A performance certified internal flush fire rated side hung doorset, factory primed and finished. This doorset shall generally be as Type DRS-101 Doorset except that it shall be sized significantly greater than standard certified doorsets and therefore need to have allowance made for project-specific testing and certification.
5. Type DRS-117 Internal Timber Hinged Service Access Doorset - Painted (FR)
- a. A performance certified internal flush fire rated side hung doorset, factory primed and finished. This doorset shall generally be as Type DRS-101 Doorset except that it has reduced function in that there is an absence of disability access.
6. Type DRS-121 Internal Timber Sliding Doorset - Painted
- a. A performance certified internal flush manually-deployed sliding doorset, factory primed and finished.
- b. Size and configuration: As shown on the Door Schedule/ Design Drawings.

- c. Conformance: BS 644, BS EN 14221, BS EN 16034 and BS 8214.
 - d. Specific Performance:
 - 1). Duty rating: Heavy.
 - 2). Fire performance: Not required.
 - 3). Acoustic performance: Refer to the Acoustic Report/ Door Schedule.
 - e. Door leaf:
 - 1). Type: Manually deployed sliding door leaf(ves).
 - 2). Solid laminated timber/flaxboard core, 44mm minimum thickness.
 - 3). Provide compliant grounds in the head rail for concealed transom overhead sliding mechanism.
 - 4). Lippings: Concealed hardwood lippings to all edges.
 - 5). Finish: Factory priming and finishing applied to a kraft paper overlayment.
 - f. Frame:
 - 1). Type: Head and side reveal liner to satisfy the wall/ partition depth, profiled to house tracks and permit door leaf passage.
 - 2). Material: Hardwood fully compliant with the qualitative and sustainability criteria stipulated within Section A of the Specification.
 - 3). Finish: Factory primed and finished with pigmented air cured lacquer.
 - g. Architectural hardware:
 - 1). Tracks: Discreet extruded aluminium tracks for manually deployed sliding operation.
 - 2). Refer to Section P21 of the Specification.
 - 3). Finger trap prevention.
 - h. Indicative Product:
 - 1). Manufacturer: ~~F R Shadbolt & Sons Ltd~~ [Lloyd Worrall Architectural Solutions](#), ~~or acceptable equivalent.~~
 - 2). Reference: ~~To be confirmed~~ [Interspec Doorsets](#).
7. Type DRS-131 Internal Timber Hinged Doorset - Laminated (FR)
- a. A performance certified internal flush fire rated side hung doorset, with hardwood lipping and high-pressure laminate facing.
 - b. Size and configuration: As shown on the Door Schedule/ Design Drawings.
 - c. Conformance: BS 644, BS EN 14221, BS EN 16034 and BS 8214.
 - d. Specific Performance:
 - 1). Duty rating: Heavy.
 - 2). Fire performance: Up to 60 minutes.

- 3). Acoustic performance: Refer to the Acoustic Report/ Door Schedule.
- e. Door leaf:
 - 1). Type: Manually deployed side hung hinged door leaf(ves).
 - 2). Solid laminated timber/flaxboard core, 54mm minimum thickness.
 - 3). Provide compliant grounds in the head rail for concealed transom overhead closers.
 - 4). Lippings: Concealed hardwood lippings to all edges.
 - 5). Finish: Vertical grade, high-pressure, through-coloured laminate (HPL), applied to both sides of the door leaf.
- f. Frame:
 - 1). Type: Rebated profile, split frame to satisfy the wall/ partition depth, complete with architrave.
 - 2). Material: Hardwood fully compliant with the qualitative and sustainability criteria stipulated within Section A of the Specification.
 - 3). Finish: Factory primed and finished with pigmented air cured lacquer.
- g. Seals: Intumescent smoke and/or acoustic seals to be of a type on which the manufacturer's certification is based.
- h. Architectural hardware:
 - 1). A concealed transom closers whereupon the manufacturer shall be required to demonstrate that they have relevant and current certification for any fire performing doorsets with this detail.
 - 2). Refer to Section P21 of the Specification.
- i. Indicative Product:
 - 1). Manufacturer: ~~F R Shadbolt & Sons Ltd~~ [Lloyd Worrall Architectural Solutions](#), ~~or acceptable equivalent~~.
 - 2). Reference: ~~To be confirmed~~ [Interspec Doorsets](#).
8. Type DRS-141 Internal Timber Hinged Doorset - Laminated (FR, AR)
 - a. A performance certified internal flush fire rated side hung doorset, with hardwood lipping and high-pressure laminate facing. This doorset shall generally be as Type DRS-131 Doorset except that it shall have enhanced acoustic performance as indicated on Acoustic Report.

212 SPECIALIST TIMBER DOORS

1. Type DRS-901 Internal Timber Hinged Doorset - Painted (FR+) - Acoustic Treated
 - a. A performance certified internal flush fire rated side hung doorset, factory primed and finished to one face and acoustic absorption treatment to other face.
 - b. Size and configuration: As shown on the Door Schedule/ Design Drawings.
 - c. Conformance: BS 644, BS EN 14221, BS EN 16034 and BS 8214, BS EN 13168 and BS EN 13162.
 - d. Specific Performance:

- 1). Duty rating: Heavy.
 - 2). Fire performance: 90/ 120 minutes. Refer to the Fire Strategy Report.
 - 3). Acoustic performance: Refer to the Acoustic Report/ Door Schedule.
- e. Door leaf:
- 1). Type: Manually deployed side hung hinged door leaf(ves).
 - 2). Solid laminated timber/flaxboard core, 54mm minimum thickness.
 - 3). Provide compliant grounds in the head rail for concealed transom overhead closers.
 - 4). Lippings: Concealed hardwood lippings to all edges.
 - 5). Finish:
 - a). Face 1: Factory priming applied to a kraft paper overlayment, ready for applied finish.
 - b). Face 2 (Acoustic Treatment):
 - i. Material: Cement-bonded wood wool panels.
 - ii. Nominal Thickness: 35mm.
 - iii. Edge/ Face Profile: Square and flush faced.
 - iv. Finish: Coarse, Fine, Ultrafine or Extreme-fine, as selected by the Architect.
 - v. Perimeter frame: Paint-receptive rigid intumescent acoustic edge protection frame minimal cross section.
 - vi. Fixing: Concealed mechanical tamper-proof acoustic fasteners.
 - vii. Indicative Product:
 - Manufacturer: Trolldtekt A/S, or acceptable equivalent.
 - Reference: Trolldtekt Acoustic Panels.
 - 6). Applied Finish:
 - a). Exposed faces shall be painted using paint recommended by the door and acoustic treatment manufacturers.
 - b). Applied finish shall not adversely affect the integrity or performance of the acoustic panel.
- f. Frame:
- 1). Type: Rebated profile, split frame to satisfy the wall/ partition depth, complete with architrave.
 - 2). Material: Hardwood fully compliant with the qualitative and sustainability criteria stipulated within Section A of the Specification.
 - 3). Finish: Factory primed and finished with pigmented air cured lacquer.

- g. Seals: Intumescent smoke and/or acoustic seals to be of a type on which the manufacturer's certification is based.
 - h. Architectural hardware:
 - 1). A concealed transom closers whereupon the manufacturer shall be required to demonstrate that they have relevant and current certification for any fire performing doorsets with this detail.
 - 2). Refer to Section P21 of the Specification.
 - 3). Hardware shall be of type that allows full door functionality whilst maintaining the door integrity and performance.
 - i. Indicative Product:
 - 1). Manufacturer: ~~To be confirmed~~ [Lloyd Worrall Architectural Solutions](#).
 - 2). Reference: ~~To be confirmed~~ [Interspec Doorsets](#).
2. Type DRS-905 Internal Timber Hinged Doorset - Painted (FR+) - Acoustic Treated
- a. A performance certified internal flush fire rated side hung doorset, factory primed and finished to one face and acoustic absorption treatment to other face. The doorset shall generally be as Type DRS-901 except that the acoustic treatment shall vary in material and thickness as follows.
 - b. Face 2 (Acoustic Treatment):
 - 1). Material: Double layer panels with cement-bonded wood wool panels facing factory adhesive bonded to non-woven material covered mineral wool backing.
 - 2). Nominal Thickness: 43mm (25mm facing, 18mm backing).
 - 3). Indicative Product:
 - a). Manufacturer: Troldekt A/S, or acceptable equivalent.
 - b). Reference: Troldekt Plus-mineral wool.
3. Type DRS-921 Internal Timber Hinged Doorset - Leather Faced (FR, AR)
- a. A performance certified internal flush fire rated side hung doorset, with factory upholstered leather facing.
 - b. Size and configuration: As shown on the Door Schedule/ Design Drawings.
 - c. Conformance: BS EN 13336, BS 644, BS EN 14221, BS EN 16034 and BS 8214.
 - d. Specific Performance:
 - 1). Duty rating: Heavy.
 - 2). Fire performance: Up to 60 minutes.
 - 3). Acoustic performance: Refer to the Acoustic Report/ Door Schedule.
 - e. Door leaf:
 - 1). Type: Manually deployed side hung hinged door leaf(ves).
 - 2). Solid laminated timber/flaxboard core, 54mm minimum thickness.

- 3). Provide compliant grounds in the head rail for concealed transom overhead closers.
- 4). Lippings: Concealed hardwood lippings to all edges.
- 5). Finish:
 - a). Facing:
 - i. Material: Fire retardant upholstery grade, full grain semi-aniline natural hide decorative leather, achieving Crib 5 (BS 5852: Part 2 Source 5).
 - ii. Finish/ Grain: To be confirmed.
 - iii. Pattern/ Colour: To be confirmed.
 - iv. Style: Button (deep, half-diamond, chester, square-pleated, float) as required by the Architect.
 - v. Expressed Stitching: Capitone, or equivalent architectural stitch type of the Architect's acceptance.
 - b). Backing:
 - i. Woodbased board 12mm nominal thickness, fire retardant treated to achieve inherent Euroclass B-S₃,d₂ reaction to fire.
 - ii. Provide suitable CMHR padding foam (and where required, interliner) between the facing and backing board. All upholstery filling/paddings shall be 100% mite free, duck or goose feather with feather proof interliner.
 - iii. The facing, padding and interliner shall be fixed to the board in a manner that ensures their individual properties and collective performance are not adversely affected.
 - c). Perimeter frame: Paint-receptive rigid intumescent acoustic edge protection frame minimal cross section.
 - d). Protective Coating: Apply suitable leather barrier cream/ lacquer recommended by the upholstery fabricator or leather distributor.
 - e). Indicative Product: To be agreed.
- f. Frame:
 - 1). Type: Rebated profile, split frame to satisfy the wall/ partition depth, complete with architrave.
 - 2). Material: Hardwood fully compliant with the qualitative and sustainability criteria stipulated within Section A of the Specification.
 - 3). Finish: Factory primed and finished with pigmented air cured lacquer.
- g. Seals: Intumescent smoke and/or acoustic seals to be of a type on which the manufacturer's certification is based.
- h. Architectural hardware:
 - 1). A concealed transom closers whereupon the manufacturer shall be required to demonstrate that they have relevant and current certification for any fire performing doorsets with this detail.

- 2). Refer to Section P21 of the Specification.
- 3). Hardware shall be of type that allows full door functionality whilst maintaining the door integrity and performance.
- i. Indicative Product:
 - 1). Manufacturer: ~~To be confirmed~~ [Lloyd Worrall Architectural Solutions](#).
 - 2). Reference: ~~To be confirmed~~ [Interspec Doorsets](#).

213 METAL DOORS

1. Type DRS-201 Internal Metal Hinged Doorset (FR)
 - a. A performance certified, internal flush faced steel fire rated side hung doorset.
 - b. Size and configuration: As indicated on the Door Schedule/ Design Drawings.
 - c. Conformance: BS EN 14351, BS EN 12400, BS EN 16034 and BS 1245.
 - d. Specific Performance:
 - 1). Duty rating: Severe.
 - 2). Fire performance: Up to 60 minutes.
 - 3). Acoustic performance: Refer to the Acoustic Report/ Door Schedule.
 - e. Door leaf:
 - 1). Type: Manually deployed side hung hinged door leaf(ves).
 - 2). Material: Zintec steel to BS EN 10152.
 - 3). Door skins shall overlap to prevent jemmying.
 - 4). Reinforced and insulated core as required to maintain performance requirements.
 - 5). Heavy duty stainless steel continuous dog-bolt hinges.
 - f. Door frame:
 - 1). Profiled, insulated core door frame.
 - 2). Concealed method of fix.
 - g. Finish: Polyester powder coated, Qualicoat Class 1 Standard Durability level to a metallic tone RAL colour and gloss level to be confirmed by the Architect.
 - h. Seals: Intumescent smoke and/or acoustic seals to be of a type on which the manufacturer's certification is based.
 - i. Architectural hardware:
 - 1). Refer to the Ironmongery Schedule.
 - 2). Refer to Section P21 of the Specification.
 - j. Indicative Product:
 - 1). Manufacturer: To be confirmed.
 - 2). Reference: To be confirmed.

2. Type DRS-205 Internal Metal Hinged Doorset (FR+)
 - a. A performance certified, internal flush faced steel fire rated side hung doorset. This doorset shall generally be as Type DRS-201 Doorset except that it shall have enhanced fire performance of 90/ 120 minutes.
3. Type DRS-211 Internal Metal Hinged Doorset (FR, AR)
 - a. A performance certified, internal flush faced steel fire rated side hung doorset. This doorset shall generally be as Type DRS-201 Doorset except that it shall have enhanced acoustic performance as indicated on Acoustic Report.

214 GLAZED DOORS

1. Type DRS-301 Internal Metal Framed Glazed Hinged Doorset (FR)
 - a. Description: Proprietary external metal framed glazed fire rated side hung doorset.
 - b. Dimensions/configuration: As indicated on the Design Drawings.
 - c. Conformance: BS EN 14351, BS 4873, BS 6375 and BS EN 16034.
 - d. Specific Performance:
 - 1). Duty rating: Severe.
 - 2). Fire performance: Up to 60 minutes.
 - 3). Acoustic performance: Refer to the Acoustic Report/ Door Schedule.
 - e. Door Leaf:
 - 1). Type: Manually deployed side hung hinged door leaf(ves).
 - 2). Frame: Extruded aluminium profiles with square slightly radiused edges and glazing beads.
 - 3). Glazing:
 - a). Clear, sealed safety glass unit.
 - b). Safety manifestation as indicated on Design Drawings.
 - f. Door frame:
 - 1). Material: Extruded aluminium profiles with square slightly radiused edges.
 - 2). Jamb: Configured to properly co-ordinate.
 - g. Finish: Polyester powder coated, Qualicoat Class 1 Standard Durability level to a RAL colour and gloss level to be confirmed by the Architect.
 - h. Seals: Intumescent smoke and/or acoustic seals to be of a type on which the manufacturer's certification is based.
 - i. Architectural hardware: Refer to Section P21 of the Specification.
 - j. Indicative Product:
 - 1). Manufacturer: To be confirmed.
 - 2). Reference: To be confirmed.

2. Type DRS-321 Internal Metal Framed Glazed Sliding Doorset (FR)
 - a. Description: Proprietary external metal framed glazed fire rated sliding doorset.
 - b. Dimensions/configuration: As indicated on the Design Drawings.
 - c. Conformance: BS EN 14351, BS 4873, BS 6375 and BS EN 16034.
 - d. Specific Performance:
 - 1). Duty rating: Severe.
 - 2). Fire performance: Up to 60 minutes.
 - 3). Acoustic performance: Refer to the Acoustic Report/ Door Schedule.
 - e. Door Leaf:
 - 1). Type: Manually deployed side hung hinged door leaf(ves).
 - 2). Frame: Extruded aluminium profiles with square slightly radiused edges and glazing beads.
 - 3). Glazing:
 - a). Clear, sealed safety glass unit.
 - b). Safety manifestation as indicated on Design Drawings.
 - f. Door frame:
 - 1). Type: Head and side reveal liner to satisfy the wall/ partition depth, profiled to house tracks and permit door leaf passage.
 - 2). Refer to Section P21 of the Specification.
 - 3). Finger trap prevention.
 - g. Finish: Polyester powder coated, Qualicoat Class 1 Standard Durability level to a RAL colour and gloss level to be confirmed by the Architect.
 - h. Seals: Intumescent smoke and/or acoustic seals to be of a type on which the manufacturer's certification is based.
 - i. Architectural hardware: Refer to Section P21 of the Specification.
 - j. Indicative Product:
 - 1). Manufacturer: To be confirmed.
 - 2). Reference: To be confirmed.

~~3. Type DRS-323 Internal Metal Framed Glazed Sliding Doorset~~

- ~~a. Description: Proprietary external metal framed glazed non fire rated sliding doorset.. This doorset shall generally be as Type DRS-321 Doorset except that it shall not have specific fire performance requirement.~~
- ~~b. Indicative Product:~~
 - ~~1). Manufacturer: CR Laurence, or acceptable equivalent.~~
 - ~~2). Reference: CRL50 Series Top Hung Sliding Door Systems.~~

1. Type DRS-641 Wall Access Hatch - Night Pay
 - a. A proprietary night payment cash transfer unit with integrated full duplex electronic speech transfer facility.
 - b. Dimensions/configuration: As indicated on the Design Drawings.
 - c. Material: Grade 1.4401 stainless steel.
 - d. Supply requirements for speech transfer: Refer to the MEP and Security consultant's documentation.
 - e. An indicative system shall be CashFast as manufactured by Safetell Ltd.

216 TIMBER FIRE DOORSETS

1. Third Party Accreditation
 - a. Fire doorsets shall manufactured from sources who have demonstrable current membership and certification to one of the UK recognised Third Party accreditation agencies which include:
 - 1). TRADA Q Mark.
 - 2). BWF - FDA (Fire Door Alliance).

217 DOOR LEAVES

1. Internal Timber Door Leaves
 - a. Core:
 - 1). Solid core to meet the performance requirements of the Specification.
 - 2). Doors to be recessed for lock boxes, door closers, hinges and other items of ironmongery as indicated on the Ironmongery Schedule and reinforced as necessary.
 - b. Moisture content on delivery: Internal doors - 12% +/- 2%.
 - c. Intumescent seals with integral smoke brush seal shall be incorporated into edges of leaves in fire doorsets, or alternatively in the frames dependent on the configuration on which the manufacturer's fire certification is based.
2. Metal Door Leaves
 - a. Doors shall be hollow metal doors made from either of these base metal to meet the requirements:
 - 1). Cold-Rolled Steel Sheet: Suitable for exposed applications.
 - 2). Hot-Rolled Steel Sheet: Free of scale, pitting, or surface defects; pickled and oiled.
 - 3). Metallic-Coated Steel Sheet: Zintec steel to BS EN 10152 and galvanized steel to BS EN 10143 and BS EN 10346.
 - 4). Stainless Steel Sheet: Austenitic to BS EN 10088: Part 2, Type 1.4301 for internal/ protected external use and Type 14401 for external use.
 - b. Thicknesses:
 - 1). Minimum nominal door thickness of 44 mm, neat appearance and free from warpage or buckle. Bend edges true and straight, and of minimum radius for the thickness of metal used.

- a). External doors fabricated from 1.3mm minimum gauge steel sheet.
- b). Internal doors fabricated from 1.06mm minimum gauge steel sheet.
- c. Edge and Core:
 - 1). Join face sheets at their vertical edges by a continuous weld extending the full height of the door, with no visible seams on their faces or vertical edges.
 - 2). Stiffen doors using continuous vertically formed steel sections which, upon assembly, span the full thickness of the internal space between door faces. Fabricate stiffeners from 1.3 mm minimum thickness steel and space them so that the vertical internal webs are no more than 152 mm apart. Securely fasten stiffeners to both face sheets by spot welds spaced a maximum of 127 mm on centre vertically. Fill spaces between stiffeners with fiberglass or mineral wool batt-type material.
 - 3). Close the top and bottom edges with a continuous steel channel, not less than 2.6 mm thickness, welded to both face sheets. Close external doors flush at the top edge. Where required for attachment for weather-stripping, provide a flush steel closure channel at the bottom edge. Provide openings in the bottom closure channel of external doors to permit the escape of entrapped moisture.

218 DOOR FRAMES

1. Timber Door Frames

- a. Solid hardwood split-frame door lining frames to suit wall thicknesses with softwood packing pieces where required, as detailed on the Design Drawings. Softwood/ Hardwood to BS EN 942.
- b. Hardwood:
 - 1). Species: To be confirmed.
 - 2). Grade: Class J2 to BS EN 942.
 - 3). Knots: Size, types allowed, plugs, inserts, fillers and distribution of knots shall be in accordance with the relevant clause in BS EN 942. Unsound, dead and loose knots shall not be present on any visible face. Making good as described in BS EN 942 shall not be acceptable. Arris, splay, margin and branched knots are not acceptable. Note that there should be a maximum knot/ knot cluster size of 6mm.
 - 4). Cutting: Quarter cut.
 - 5). Resin pockets are not acceptable in any event on any exposed surface. No making good shall be allowed.
 - 6). Discoloured sapwood is not acceptable. Refer to BS EN 942.
- c. Fabricate to BS 1186: Part 2 carefully machining timber to accurate lengths and profiles; free from twisting and bowing. After machining, surfaces shall be smooth and free from tearing, woolliness, chip bruising and other machining defects.
- d. Assemble with tight, close fitting joints to produce components free from distortion.
- e. Pack any gaps between door frame and wall with mineral wool or similar.
- f. Finish to frames shall be:

- 1). Paint as Section M60.
 - 2). Clear lacquer as Section M60.
 - g. Fixing: Counterbored, screwed, plugged with colour-matching prefinished tapered pellet as Section Z10 of the Specification.
 - h. Cross-sectional dimensions: Dimensions shall be as indicated on the Design Drawings. Reduction to finished sizes for hardwood shall be to BS EN 1313: Part 2. Deviation from the stated sizes shall not be permitted unless prior acceptance is given.
 - i. Shadow gap detail between wall and frame shall be as indicated on the Design Drawings.
 - j. Seals: Seals to fire doors shall be of a type on which the manufacturer's certification is based.
2. Metal Door Frames
 - a. The door frames shall consist of steel profiles manufactured to comply with the basic requirements of BS 1245.
 - b. The door frames shall include integral door stops that are within the frame profile.
 - c. Refer also to Sections Z11 and Z30.

219 SEALS

1. Fire and Smoke Seals
 - a. Provide and test intumescent strips and smoke seals to suit the final door and frame design.
 - b. Compression type smoke seals that do not distort after use.
 - c. Permanently fixed smoke seals and intumescent strips recessed into frames strictly in accordance with the manufacturer's written recommendations.
 - d. Seals as follows:
 - 1). One hour intumescent strips set into door frames to FD-60 doors.
 - 2). Separate neoprene or similar smoke seals set into door frames as indicated on the Design Drawings.

220 LEATHER

1. Generally
 - a. Leather material for use in each space and for each colour and pattern shall be obtained from one dye lot and from the same production run with sequence number clearly marked to ensure sequential installation.
 - b. Leather shall have suitable care instructions and be delivered in pristine condition and without folds.
 - c. Selection of leather shall comply with BS EN 13336.
 - d. Product: BS EN ISO 2589.
 - e. Mass: Circa 900gm² ±5%.
 - f. Fastness to light: Blue Wool Test 4/5 (min) to BS EN ISO 105-B02.
 - g. Fastness to rubbing: 250 No. rubs Wet / 500 No. rubs Dry to BS EN ISO 11640.
 - h. Tear strength: 40N to BS EN ISO 3377: Part 1.

- i. Fire rating in a domestic context: Certified 'Pass' to BS EN 1021: Part 1 and Part 2.

2. CMHR Foam

- a. Conformance: BS EN ISO 2439, BS EN ISO 845, BS EN ISO 1798 and BS EN 1866.
- b. Flammability: CRIB 5 to BS 5852: Part 2.

221 FABRICATION

1. Generally

- a. All door leaves and door frames shall be factory prefinished and be by the same manufacturer. Alternatively, the frames may be manufactured by a source recommended in writing by the door leaf manufacturer.
- b. All doorsets to be pre-hung and be covered by industry recognised independent third party certification indicating compliance of individual doorsets with the required performance.

222 TOLERANCES

1. General

- a. All work shall be performed by skilled workmen, especially trained and experienced in this type of work.
- b. A high degree of accuracy is required in the fabrication and installation of the work.
- c. Carry out all work and use all materials in accordance with the manufacturer's printed recommendations.
- d. Accurately cut and form materials to the required shape and with all exposed surfaces and edges true and free from irregularities and defects, using techniques that will not impair the strength of materials used.
- e. The works elements shall be square, regular to level and plane with all junctions fitting to the stated tolerances.
- f. Wireways must be allowed for connection to equipment within the framing system, back to the building power supply (to allow for wiring by the Electrical Works Contractor). Co-ordinate provisions for electrical service, sensing devices and final connections. Connect all parts of equipment with insulated wiring as required for operation.
- g. Ensure that the shadow gaps shown on the design are maintained at the head and jamb conditions.

2. Manufacturing Tolerances

- a. Tolerances for Manufacture:
 - 1). The works shall appear smooth and flat. The required flatness criterion shall be 1:1000.
 - 2). Manufacturing tolerances shall be in accordance with BS 4787: Part 1, BS 5277, BS 1245, BS 5278, BS EN 1529, BS EN 1530 and BS EN 951.
- b. The Working Drawings shall state the tolerances intended to accommodate surrounding constructional elements in order to ensure that all aspects of the installation interface satisfactorily with the building as a whole.

223 FINISHES

1. General

- a. Frames shall be factory primed with acrylic primer, as recommended by the door manufacturer, to receive paint by others to match, in terms of colour and gloss levels, the factory applied finish to the door leaf and eggshell paint applied to walls.
- b. Paint finishes shall be stable and fade resistant.
- c. Paint finishes shall be durable, of uniform texture and colour and shall match in terms of colour and gloss levels, the eggshell paint applied to the wall surfaces throughout.
- d. Minor scratches and blemishes shall be repairable with the coating manufacturer's recommended product and system, matching the original finish for colour, texture and gloss.
- e. Metal Finishes: Refer to Sections Z30 and Z31.
- f. Refer to the project Finishes Schedule.

EXECUTION

310 INSTALLATION

1. General

- a. Fire doorsets shall be installed by specialists fully and demonstrably accredited to a third party accreditation scheme such as BWF Fire Door Alliance or a nationally recognised equivalent initiative.
- b. Particular attention shall be paid to the interface between the door frames and new and existing walls when preparing the Working Drawings and during installation. Interfacing requirements shall be in accordance with the visual requirements as indicated on the Design Drawings.
- c. During construction, doors and ironmongery shall be protected after fitting and care taken to avoid fitting any doors and ironmongery whilst "wet" trades are still in progress. Doors and ironmongery shall be kept away from abrasives, acids and other corrosive materials.

2. Protection of Components: Do not deliver to Site components, which cannot be put immediately into suitable dry, covered storage with a dry floor. Stack on bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.

3. Protection of Components after Installation: Ensure that all door frames have protective coverings during storage and after installation to protect factory applied finishes. Door leaves shall also be protected during on-Site operations.

4. Moisture Content

- a. All timber shall be subjected to controlled drying to ensure that the moisture content, if not otherwise specified, is suitable for the situation of the finished joinery. When fixed it shall remain stable and free from expansion, contraction or other movements detracting from the required performance or appearance.
- b. During delivery, storage, fixing and thereafter to Practical Completion maintain conditions of temperature and humidity to suit the specified moisture content (s) of timber components. When instructed by the Architect, test components with an accepted electrical moisture meter used in accordance with the manufacturer's written recommendations.

5. Ironmongery: Assemble and fix carefully and accurately using fastenings with a matching finish supplied by the ironmongery manufacturer. Prevent damage to ironmongery and adjacent surfaces. At completion check, adjust and lubricate as necessary to ensure correct functioning.

6. Sealant Joints
 - a. Refer to Section Z22.
 - b. Sealants for door frames shall be silicone where required, as detailed on the Design Drawings.
7. On-Site Dimensions
 - a. Take responsibility for all dimensions and for checking dimensions on Site prior to manufacture.
 - b. Ensure that the Detailed Design accommodates any given tolerances and differences between actual Site dimensions and dimensions shown on the Design Drawings.

311 FIXINGS

1. Generally
 - a. Refer to Section Z20.
 - b. Fixing centres for door frames: When not predrilled or specified otherwise, position fixings 150mm from each end of jamb, adjacent to each hanging point and at 600mm maximum centres.
 - c. For ironmongery fixing refer to Section P21.

312 INSTALLATION TOLERANCES

1. Generally
 - a. At the time of handover the visual requirements of the works shall be as follows:
 - 1). The works shall be straight and flat.
 - 2). Gaps to head and jambs of doors to frames shall be 3mm all round.
 - 3). Thresholds shall have a 7mm gap where located above a carpeted floor.
 - 4). The maximum variation from plumb shall be +/- 1.5mm.
 - 5). Cut-outs for interfacing works shall be to the dimensions shown on the Working Drawings +/- 1mm.
 - b. Take responsibility for checking dimensions on Site.

END OF SECTION