

THE BRITISH MUSEUM

**THE SOUTH STAIR,
CENTRAL SALOON &
GALLERIES 37 TO 40**

**SPECIFICATION:
NEW AND REFURBISHMENT OF
EXISTING INTERNAL FLOOR
FINISHES**

Authorised:	JEC
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Job N°:	LN08732
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Revision:	B
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Clerkenwell
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A01 GENERAL INFORMATION

110B CLAUSE SUFFIX LETTERS:

- This BDP Specification is based upon the National Building Specification (NBS). The Contractor's attention is drawn to the suffix letters 'A', 'B' and 'J' that occur after some of the clause numbers in the work sections. These suffix letters are used as follows:

'A' is used for an NBS clause which has been altered in the BDP Standard Specification.

'B' is used for a new clause, not found in NBS, in the BDP Standard Specification.

'J' is used for a new clause in this particular Job Specification or against an existing clause from the BDP Standard Specification amended for this project.

- No liability is accepted for the incorrect application of this convention in this Specification.

115B MAIN CONTRACT PRELIMINARIES

The Contractor's attention is drawn to the Main Contract Preliminaries which must be considered in addition to the contents of this specification. These include the terms of the Contractor's obligations under the Contractor Design Portions of the work where they pertain to individual work packages.

120B DESIGN RESPONSIBILITIES GENERALLY:

The contractor shall be responsible for developing and completing the design in accordance with the Contract Documents

The Contractor shall provide sufficient drawn information to illustrate the design and construction solutions he proposes including details of any suggestions for amendments to the details, additional secondary support or working methods in this specification. After award of Contract, the Contractor shall submit design development drawings, method statements and calculations to the CA and complete details of any agreed changes to the specification for review prior to the development of shop drawings and fabrication drawings. This will include how the contractor has coordinated and incorporated the requirements of all other trades including the M+E requirements (floor access panels etc)

The Contractor shall, with his Tender, bring to the CA's attention any discrepancies or contradictions in the Tender Documents.

The contractor shall ensure detailed design coordination is carried out in good time with all other design elements including M+E building services to ensure incorporation of all other design/construction requirements. Particular attention is required to the accurate setting out and location of services outlet boxes below floor level in order to ensure these are coincidental with the associated access panels above. The latter will need to be set out to the nearest joint line within the floor board joints.

All timber is to be sourced from professionally, well managed, approved sustainable forests that are certified by an International Assessor recognised by the Forest Stewardship Council (FSC).

123B SURVEYS:

- The Contractor is advised to arrange the necessary site inspection/visit during the tender period to ensure a full understanding of the scope of work identified on the above drawings.

Following removal or strip-out of existing floor coverings (e.g. vinyl), the Contractor shall carry out the following surveys of all existing retained floor finishes which require temporary lifting and reinstatement to install M+E services, including stone and oak strip flooring:

- Detailed dimensional survey - of each relevant room and all retained floor finishes including accurate setting out and location of all joints for each material (board widths, slab sizes, metal grills etc) relative to the surrounding wall finishes.
- Record Survey – locating and identifying all individual elements (slabs, boards, metal grills etc) in order to ensure reinstatement in the exact same position.
- Photographic Condition Survey – recording the condition and location of all existing finishes prior to any temporary lifting.
- Moisture content of all existing oak boards at the beginning of the project prior to any demolition and just prior to lifting. Relative humidity and temperature to also be measured at this time.

Drawings, photographs and any documents recording the above survey information are to be submitted to the CA for verification prior to commencing any lifting works.

- In areas of proposed new finishes and upon further request, the Contractor is to provide accurate dimensional survey information following completion of each type of floor finish to allow the design team to confirm the setting out of subsequent finishes (for instance, following the installation of new stone borders but prior to installation of the oak strip flooring).
- The contractor is to set out all boarding in order to ensure no boards require cutting along their length. Setting out to be confirmed and agreed with CA prior to commencing installation.
- The contractor shall be responsible for regularly monitoring and recording the existing temperature and relative humidity in three different fixed locations (to be agreed with CA) adjacent to the construction site from the award of contract to installation of timber floor finishes

- The contractor shall ensure that all levels as indicated on the design drawings run through continuously and avoid any trip hazards without the need for proprietary threshold strips.

124B METHOD STATEMENTS:

The Contractor is to submit detailed method statements clearly indicating how he proposes to remove or lift each existing floor finish (stone slabs, oak boarding etc) in order to avoid any damage. This shall also include where this material is to be temporarily stored and, in the case of the timber boards, evidence that the environmental conditions (relative humidity and moisture content) will not vary from the existing prior to the commencement of the work. The contractor is also to indicate the method of protection.

125B OTHER CONSULTANTS WORK:

This specification refers to the portion of the work relating to all new and existing internal floor finishes including new oak strip flooring and stonework. It must ALSO be read in conjunction with other relevant Architectural, Structural and Building Services Engineer's specifications and drawings mentioned both in this specification and elsewhere in the main contract documents which will describe any further requirements, limitations and constraints upon any work done to the related fabric and engineering works. Where there is any doubt about the extent of these works or with co-ordination issues this shall immediately be referred to the CA for clarification prior to pricing or construction of the works.

130B DESCRIPTION OF THE WORK:

Scope: As generally defined below and on the following architectural drawings/documents:

- LN08732/GI200E-BDP-A-2110 to 2183 inclusive
- LN08732/GI200E-BDP-A-2361 to 2389 inclusive
- LN08732/GI200E-BDP-A-2801 to 2820 inclusive.
- LN08732/GI200E-BDP-A-SPC-43-002 & 003.

In summary, this includes, but is not limited to, the following new and existing elements:

- Careful removal, reinstatement and cleaning of existing stone floor slabs within Galleries 37, 38 and 39 (see specification GI200E-BDP-A-SPC-43-003).
- Cleaning of existing stone floor finishes generally (see specification GI200E-BDP-A-SPC-43-003).
- Cleaning of existing stone columns between Galleries 36/37 (see specification GI200E-BDP-A-SPC-43-003).
- New stone floor finishes generally.
- Careful removal, reinstatement and cleaning of existing oak floor boards within Gallery 39.
- New oak strip flooring generally
- New floor access panels within oak flooring.
- New vinyl floor finishes
- New floor paint finishes

This specification and the above drawings are to be read in conjunction and coordinated with all other relevant tender/construction and archive information available including, but not limited to, the following:

- Architectural drawings LN08732/GI200E-BDP-A-2210 to 2283 inclusive for scope of protection, strip-out, removal and setting aside of existing elements of joinery.
- Drawings LN08732/GI200E-BDP-A-2501 to 2530 inclusive.
- All Structural Engineer's drawings/documents showing existing and proposed new structure.
- All other Structural Engineer's drawings including those relating to temporary works and construction sequencing
- All proposed Building Services Engineer's drawings and specifications for scope of all primary and secondary builder's work in connection with services (including floor boxes etc)
- Fire Consultant's Fire Strategy document and drawings for the Museum
- All British Museum Standard Fire Precaution and Policy documents including Fire Stopping Supplement (see main contract preliminaries)
- All other existing site record information relating to architectural fabric, structure and building services.
- Records of any known existing hazardous materials including asbestos.

BM - Floor Finishes

23 February 2007

This document includes:

Code	Section	Revision	Dated
K11	Rigid sheet flooring/ sheathing/ decking/ sarking/ linings/ casings	A	16 Feb 2007
K20	Timber board flooring/ sarking/ linings/ casings	B	23 Feb 2007
K21	Wood strip/ board fine flooring/ linings	B	23 Feb 2007
M40	Stone/ concrete/ quarry/ ceramic tiling/ mosaic	A	16 Feb 2007
M50	Rubber/ plastics/ cork/ lino/ carpet tiling/ sheeting	A	16 Feb 2007
M60	Painting/clear finishing	A	16 Feb 2007
Z20	Fixings/ adhesives	A	16 Feb 2007

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K11

**Rigid sheet flooring/ sheathing/ decking/ sarking/
linings/ casings**

Section Revision History

No.	Purpose	
A	Issued for Tender	16 Feb 2007

Clauses amended in this revision

This is the first revision stamp for this section. For all future revision stamps, details of all clauses amended at that revision will be included here.

K11 Rigid sheet flooring/ sheathing/ decking/ sarking/ linings/ casings

To be read with Preliminaries/ General conditions.

TYPES OF FLOORING/ SHEATHING/ DECKING/ SARKING/ LINING/ CASINGS

- 315A PLYWOOD FLOORING BELOW TYPE T1 FLOOR FINISH**
- Document References: GI200E-BDP-A-2385, 2389, 2801 and schedule GI200E-BDP-A-SPC-43-002
 - Substrate: Existing and new timber joists.
 - Additional supports: As clause 930.
 - Flooring: Plywood manufactured to the relevant standards and quality control procedures specified in BS 5268-2, and so marked.
 - Type: Finnish birch plywood.
 - Grade: WBP external grade bonding; minimum grade B-B; sanded.
 - Nominal thickness/ number of plies: 21mm/ 15 plies.
 - Edges: Tongued and grooved all edges.
 - Other requirements: As Clause 940A.
 - Setting out: Long edges running across joists. End joints central over joists and staggered.
 - Fixing to joists:
 - Fasteners: 50 mm x 8 gauge wood screws into pilot hole.
 - Fixing centres (maximum):
 - Around floor perimeter and along short edges of each board: 150 mm.
 - Along intermediate supports: 300 mm.
 - Fixing distance from edges: 25 mm from long edges and minimum 10 mm from short edges.
 - Joint treatment: PVA to BS EN 204, class D3..
 - Expansion provision:
 - Clear expansion gap around perimeter of floor area and upstands: 1.5 mm per metre run of floor, with a minimum gap of 10 mm.
 - Intermediate expansion/ movement joints: As recommended by flooring manufacturer.

315B PLYWOOD FLOORING BELOW TYPE T2 FLOOR FINISH

- Document References: GI200E-BDP-A-2385, 2389, 2801 and schedule GI200E-BDP-A-SPC-43-002
- Substrate: Existing and new timber joists.
 - Additional supports: As clause 930.
- Flooring: Plywood manufactured to the relevant standards and quality control procedures specified in BS 5268-2, and so marked.
 - Type: Finnish birch plywood.
 - Grade: WBP external grade bonding; minimum grade B-B; sanded.
 - Nominal thickness/ number of plies: 2 no. layers (Lower: 18mm/ 13 plies; Upper: 9mm/7 plies).
 - Edges: Tongued and grooved all edges.
 - Other requirements: As Clause 940A.
- Setting out: Long edges running across joists. End joints central over joists and staggered.
- Fixing to joists:
 - Fasteners: 50 mm x 8 gauge wood screws into pilot hole.
 - Fixing centres (maximum):
 - Around floor perimeter and along short edges of each board: 150 mm.
 - Along intermediate supports: 300 mm.
 - Fixing distance from edges: 25 mm from long edges and minimum 10 mm from short edges.
- Joint treatment: PVA to BS EN 204, class D3..
- Expansion provision:
 - Clear expansion gap around perimeter of floor area and upstands: 1.5 mm per metre run of floor, with a minimum gap of 10 mm.
 - Intermediate expansion/ movement joints: As recommended by flooring manufacturer.

315C PLYWOOD FLOORING BELOW TYPE V1 FLOOR FINISH

- Document References: GI200E-BDP-A-2385, 2389, 2801 and schedule GI200E-BDP-A-SPC-43-002
- Substrate: Existing and new timber joists.
 - Additional supports: General as clause 930. Allow additional 25X500mm softwood battens to pack up floor joists within Gallery 40 plant areas at Level 6.
- Flooring: Plywood manufactured to the relevant standards and quality control procedures specified in BS 5268-2, and so marked.
 - Type: Finnish birch plywood.
 - Grade: WBP external grade bonding; minimum grade B-B; sanded.
 - Nominal thickness/ number of plies: 18mm/ 13 plies.
 - Edges: Tongued and grooved all edges.
 - Other requirements: As Clause 940.
- Setting out: Long edges running across joists. End joints central over joists and staggered.
- Fixing to joists:
 - Fasteners: 50 mm x 8 gauge wood screws into pilot hole.
 - Fixing centres (maximum):
 - Around floor perimeter and along short edges of each board: 150 mm.
 - Along intermediate supports: 300 mm.
 - Fixing distance from edges: 25 mm from long edges and minimum 10 mm from short edges.
- Joint treatment: PVA to BS EN 204, class D3..
- Expansion provision:
 - Clear expansion gap around perimeter of floor area and upstands: 1.5 mm per metre run of floor, with a minimum gap of 10 mm.
 - Intermediate expansion/ movement joints: As recommended by flooring manufacturer.

315D PLYWOOD FLOORING BELOW TYPE S5 FLOOR FINISH

- Document References: GI200E-BDP-A-2385, 2389, 2801 and schedule GI200E-BDP-A-SPC-43-002
- Substrate: Steel/timber joists at 300mm centres (refer to Structural Engineer's drawings) .
 - Additional supports: As clause 930.
- Flooring: Plywood manufactured to the relevant standards and quality control procedures specified in BS 5268-2, and so marked.
 - Type: Finnish birch plywood.
 - Grade: WBP external grade bonding; minimum grade B-B; sanded.
 - Nominal thickness/ number of plies: 2 no. separate sheets of 12mm plywood (9 plies per sheet).
 - Edges: Squared off edges.
 - Other requirements: The plywood should be allowed to acclimatise for at least 3 weeks on-site in the location where it is to be installed prior to use. The lower face and edges of the boards must then be sealed to reduce the possibility of transient changes of atmospheric humidity causing distortion to the board..
- Setting out: Long edges running across joists. End joints central over joists and staggered so no vertical joints align through with a 1mm - 2mm joint between boards.
- Fixing to joists:
 - Fasteners: Stainless Steel self drilling/tapping screws as appropriate for fixing direct to steelwork/ timber below..
 - Fixing centres (maximum):
 - Around floor perimeter and along short edges of each board: 150 mm.
 - Along intermediate supports: 300 mm.
 - Fixing distance from edges: 25 mm from long edges and minimum 10 mm from short edges.
- Joint treatment: Leave 1-2mm gap between boards. Seall all edges.
- Expansion provision:
 - Clear expansion gap around perimeter of floor area and upstands: 1.5 mm per metre run of floor, with a minimum gap of 10 mm.
 - Intermediate expansion/ movement joints: As recommended by flooring manufacturer.

315E PLYWOOD FLOORING BELOW TYPE S7 FLOOR FINISH

- Substrate: Lift Car Floor - steel plate.
 - Additional supports: N/A.
- Flooring: Plywood manufactured to the relevant standards and quality control procedures specified in BS 5268-2, and so marked.
 - Type: Finnish birch plywood.
 - Grade: WBP external grade bonding; minimum grade B-B;sanded.
 - Nominal thickness/ number of plies: 18mm/13 plies.
 - Edges: Tongued and grooved all edges.
 - Other requirements: .
- Setting out: Minimum number of joints to suit lift car floor.
- Fixing: Continuous epoxy adhesive bonded to lift car floor substrate
- Joint treatment: PVA to BS EN 204, class D3..
- Expansion provision:
 - Clear expansion gap around perimeter of floor area and upstands: 5mm around perimeter floor.
 - Intermediate expansion/ movement joints: As recommended by flooring manufacturer.

WORKMANSHIP**910 INSTALLATION GENERALLY**

- Timing: Building to be weathertight before fixing boards internally.
- Moisture content of timber supports (maximum): 18%.
- Joints between boards: Accurately aligned, of constant width and parallel to perimeter edges.
- Methods of fixing, and fasteners: As section Z20 where not specified otherwise.

- 930 ADDITIONAL SUPPORTS**
- Additional studs, noggings/ dwangs (Scot) and battens:
 - Provision: In accordance with board manufacturer's recommendations and as follows:
 - Tongue and groove jointed rigid board areas: To all unsupported perimeter edges.
 - Butt jointed rigid board areas: To all unsupported edges.
 - Size: Not less than 50 mm wide and of adequate thickness.
 - Quality of timber: As for adjacent timber supports.
 - Treatment (where required): As for adjacent timber supports.
- 940 BOARD MOISTURE CONTENT AND CONDITIONING**
- Moisture content of boards at time of fixing: Appropriate to end use.
 - Conditioning regime: Submit proposals.
- 940A BOARD MOISTURE CONTENT AND CONDITIONING TO AREAS BELOW FLOOR TYPES S5, S7, T1 AND T2**
- Moisture content of boards at time of fixing: To match oak flooring and final design conditions.
 - Conditioning regime:
 - Boards to be appropriately packaged and protected from damage and moisture variations during transport from supplier to final installation.
 - Boards to be delivered to site only once the building is fully weathertight, all wet trades have been completed and fully dried out and the environmental conditions (including temperature and relative humidity levels) have stabilised to the design levels (eg with fully operating heating system (if winter)).
 - Boards to be allowed to fully acclimatise to final design conditions for a minimum of three weeks together with oak boarding to be applied on top.
 - Conditions during and after installation: Control ambient temperature and humidity conditions to maintain moisture content at average level specified in BS EN 942, table B.1 for the relevant design service conditions until Completion. Refer to M+E design and specification for final design conditions.
 - Test for moisture content: When instructed, using an approved moisture meter.
- 950 MOISTURE CONTENT TESTING**
- Test regime and equipment: Submit proposals.
 - Test results: Submit record of tests and results.
- 960 FIXING GENERALLY**
- Boards/ sheets: Fixed securely to each support without distortion and true to line and level.
 - Fasteners: Evenly spaced in straight lines and, unless otherwise recommended by board manufacturer, in pairs across joints.
 - Distance from edge of board/ sheet: Sufficient to prevent damage.
 - Surplus adhesive: Removed as the work proceeds.
- 980 OPEN JOINTS**
- Perimeter joints, expansion joints and joints between boards: Free from plaster, mortar droppings and other debris.
 - Temporary wedges and packings: Removed on completion of board fixing.
- 990 ACCESS PANELS**
- Size and position: Agree before boards are fixed.
 - Additional noggings/ dwangs (Scot), battens, etc: Provide and fix as necessary.

990A ACCESS PANELS

- **Generally:** See drawings GI200E-BDP-A-2362 and 2801 for general layout and typical details.
- **Size and position:** Agree before fixing boards. NB Services boxes below floor level to be located accurately below agreed locations. Particular attention is required to the accurate setting out and location of services outlet boxes below floor level in order to ensure these are coincidental with the associated access panels above. The latter will need to be set out to the nearest joint line within the floor board joints.
- **Additional noggings/ dwangs (Scot), battens, etc:** Provide and fix as necessary

K20
Timber board flooring/ sarking/ linings/ casings
Revision B

Section Revision History

No.	Purpose	
A	Issued for Tender	16 Feb 2007
B	Issued for Tender	23 Feb 2007

Clauses amended in this revision

No.	Clause	
120A	TYPE T3 - NATURAL OAK BOARD FLOORING	Revised

K20 Timber board flooring/ sarking/ linings/ casings

To be read with Preliminaries/ General conditions.

TYPES OF FLOORING/ SARKING/ LININGS/ CASINGS

120A TYPE T3 - NATURAL OAK BOARD FLOORING TO GALLERY 38

- Specialist Supplier and Installer: The Oak Warehouse (or equal approved), 6 Central Trade Park, Saltney, Chester CH4 8SX; tel: 01244 676565 fax: 01244 67770; e-mail: contactus@oakwarehouse.co.uk
- Substrate: Existing timber joists at approximately 350mm centres.
- Preparation: Ensure all joists and perimeter stonework are structurally sound, level and free of any previous adhesives or fixings (protruding nails/screws etc) and other obstructions as recommended by specialist supplier/installer.
- Boards: Generally to recommendations in BS 8201:1987 & BS EN 942, table B.1: To be fully seasoned 'prime grade' oak, free of all heartwood, sap wood, fissures, shakes, and knots.
 - Species: European Oak.
 - Finished face width (exposed width after fixing):
 - To match range of existing widths in adjacent Gallery 39 (85 - 110mm in 5mm increments). Allow equal quantities of different widths to ensure all boards across width of room (4045mm approx. between stone borders) remain within the existing range ie no boards cut less than 85mm or greater than 110mm. To be laid in random lengths ranging between 1800mm & 3600mm in increments of 360mm.
 - Specialist to survey existing widths in Gallery 39 to ensure an equivalent distribution of varying widths. Generally wider boards located in the middle and reduce gradually towards the edges.
 - Movement - Approximately 1/2mm gap to be incorporated between each board joint to allow for expansion as recommended by specialist supplier/installer.
 - Finished thickness: Allow 28 mm. N.B. Specialist to re-survey final depth following reinstatement of surrounding stone slabs along borders to ensure floor levels between finishes remain flush.
 - Edges: Tongued and grooved.
 - Moisture content at time of fixing: Refer to clause 330A and notwithstanding BS 8201:1987, moisture content to suit final service design conditions: 8-10% as recommended by specialist supplier/installer.
- Fixing: As recommended by specialist supplier/installer. SikaBond T52 adhesive to top of all joists as Section Z20 followed by secret fixed staples or nails (Primatec or equal approved) through tongue at every board joint and joist.
- Other requirements: Seal all areas with polyurethane floor seal as clause M60/110A

120B TYPE T4 - EXISTING NATURAL OAK BOARD FLOORING TO GALLERY 39

- Following removal of covering finishes and completion of relevant surveys as clause A01/123B the contractor/specialist is to inspect the existing timber floor in Gallery 39 in order to establish that the timber is dry and free from disease or other defects (in accordance with the guidelines of TRADA Wood Information Sheet section 4 sheet 23 'Non - Destructive testing of Timber.' The contractor/specialist is to submit a report on any defects or damage found and offer the inspected material to the CA for a visual check of condition prior to carrying out lifting or removal works.
- The contractor/specialist is to establish the nature, location and number of existing fixings and type of substrate prior to submitting method statement for proposed lifting of boarding.
- Upon approval, the existing floor boards to be carefully lifted, set aside and protected prior to reinstatement in original or similar locations.
- Boarding to be carefully lifted with a wide flat lever or other suitable implement in order to avoid pulling through existing nail fixings and causing local damage to material.
- Remove any existing nails from top surface (or edges) by tapping through from the back and pulling out from the front. Fill nail holes and any surface markings with a proprietary filler to match existing timber to the approval of the CA.
- Clean off accumulated dust, dirt and any other protrusions or surface material back to original board surface.
- Where removed boards have been damaged historically, new seasoned matching timber of the same species, colour, grain and moisture content to be pieced in by specialist in agreement with CA.
- Ensure all joists and perimeter stonework are structurally sound, level and free of any previous adhesives or fixings (protruding nails/screws etc) and other obstructions.
- Boards to be re-laid as clause 370A in similar positions and with similar setting out as recorded in previous survey to CA' approval. Reinstated floor to incorporate new access panels as drawing GI200E-BDP-A 2801 including any necessary additional support and adaptation to existing boards.
- All joints between boards to incorporate a continuous 1/2mm gap using standard spacers. Boards to be adhesive bonded to existing joists below with Sikabond T52 (or equal approved) and secret nailed as recommended by flooring specialist and as clause 370A.
- Following reinstatement, and approval of sample area, carefully sand existing boards back to original natural wood finish with varying grades of abrasive (coarse to fine).
- Seal floor as clause M60/110A in accordance with sealant manufacturer's recommendations.

250A SAMPLES

- General: Submit representative samples of the following for approval:
 - Typical sample of 'prime grade' oak boarding sealed as specified
 - Typical sample of proposed access panel brass lifting socket and spring catches

260A CONTROL SAMPLES

- General: Submit representative samples of the following for approval:
 - Clause 120A - Typical 1000X1000mm sample of new oak boarding installed with 1/2mm joint gaps and sealed. Panel to incorporate a typical working access panel as clause 360A including proposed brass lifting socket and spring catch mechanism.
 - Clause 120B - Typical 1000X1000mm sample of existing reinstated oak boarding, sanded and sealed as part of final installation

WORKMANSHIP

310A WORKMANSHIP GENERALLY

- Protection during and after installation: Keep boards dry. Protect from dirt, stain and damage until Completion.
- Boards to be used internally: Do not install until building is watertight.
- Methods of fixing, and fasteners: As section Z20.
- Moisture content of timber supports at time of fixing boards: To be same as new boards following full acclimatisation in final design conditions. Any new joists, trimmers, noggings etc to be allowed to dry out fully before installing any boarding. Carry out moisture test and submit results to CA before proceeding.

320 MOISTURE CONTENT OF NEW CONCRETE/ SCREED SUBSTRATES FOR FLOATING FLOORS

- Test for moisture content:
 - Standard: To BS 8201, Appendix A, using an accurately calibrated hygrometer.
 - Readings: Take in corners, along edges, and at random points over the area being tested.
- Acceptability: Do not lay flooring until all readings show 75% relative humidity or less.

330A MOISTURE CONTENT OF TIMBER

- Boards to be appropriately packaged and protected from damage and moisture variations during transport from supplier to final installation as recommended by specialist supplier.
- Boards to be delivered to site only once the building is fully weathertight, all wet trades have been completed and fully dried out and the environmental conditions (including temperature and relative humidity levels) have stabilised to the design levels (eg with fully operating heating system (if winter)).
- Boards to be allowed to fully acclimatise to final design conditions for a minimum of three weeks or as recommended by specialist supplier.
- Conditions during and after installation: Control ambient temperature and humidity conditions to maintain moisture content at average level specified in BS EN 942, table B.1 for the relevant design service conditions until Completion. Refer to M+E design and specification for final design conditions.
- Test for moisture content: When instructed, using an approved moisture meter.

360A FLOOR ACCESS PANELS

- See drawings GI200E-BDP-A-2362 and 2801 for general layout and typical details
- Panels to incorporate recessed flush brass lifting socket and to be mounted onto steel plate backing and spring catches to joist below. Submit samples.
- Size and position: Agree before fixing boards. NB Services boxes below floor level to be located accurately below agreed locations
- Additional noggings/ dwangs, battens, etc: Provide as necessary.

370A FIXING BOARDS

- As recommended by specialist oak floor supplier and installer.
- Generally: Fix boards securely to each support to give flat, true surfaces free from undulations, lipping, splits and protruding fasteners.
- Timber movement: Position boards and fixings to prevent cupping, springing, excessive opening of joints and other defects.
- Joints - Approximately 1/2mm gap (using spacers) to be incorporated between each board joint to allow for expansion as recommended by specialist supplier/installer
- Heading joints: Tightly butted, central over supports and at least two board widths apart on any one support.
- Edges: Plane off proud edges.
- Exposed nail heads: Not allowed

K21
Wood strip/ board fine flooring/ linings
Revision B

Section Revision History

No.	Purpose	
A	Issued for Tender	16 Feb 2007
B	Issued for Tender	23 Feb 2007

Clauses amended in this revision

No.	Clause	
110A	TYPE T1 - OAK STRIP FLOORING	Revised
110B	TYPE T2 - OAK STRIP FLOORING	Revised

K21 Wood strip/ board fine flooring/ linings

To be read with Preliminaries/ General conditions.

TYPES OF FLOORING/ LINING

- 110A TYPE T1 - OAK STRIP FLOORING TO GALLERIES 36 & 37
- Substrate: Plywood as clause K11/315A..
 - Preparation: As recommended by specialist oak flooring supplier/installer.
 - Vapour control layer: Not required.
 - Strips/ Boards: Generally to recommendations in BS 8201:1987 & BS EN 942, table B.1. Free from decay, through splits and insect attack (including ambrosia beetle damage). Planed all round.
 - Specialist Supplier/Installer: The Oak Warehouse (or equal approved), 6 Central Trade Park, Saltney, Chester CH4 8SX; tel: 01244 676565 fax: 01244 67770; e-mail: contactus@oakwarehouse.co.uk.
 - Wood species: European Oak.
 - Appearance class/ Grade: Prime grade oak - To be fully seasoned, free of all heartwood, sap wood, fissures, shakes, and knots. Planed all round..
 - Finished face width: 100 mm.
 - Finished thickness: 15mm.
 - Edges: Square.
 - Moisture content at time of fixing: 8-10%.
 - Method of fixing/ joining: As recommended by specialist supplier/installer. SikaBond T52 adhesive applied to substrate surface as Section Z20 followed by secret fixed staples or nails (Primatec or equal approved) at 300mm minimum centres.
 - Finish: Natural finish to be sealed on site as clause M60/110A.
 - Accessories: Floor access panels as clause 340A.
 - Other requirements:
 - Movement - Incorporate 1/2mm gap between each board joint using spacers to allow for expansion as recommended by specialist supplier/installer
 - To be laid in random lengths ranging between 1800mm & 3600mm in increments of 360mm..

110B TYPE T2 - OAK STRIP FLOORING TO GALLERY 40

- Substrate: Plywood as clause K11/315B..
 - Preparation: As recommended by specialist oak flooring supplier/installer.
- Vapour control layer: Not required.
- Strips/ Boards: Generally to recommendations in BS 8201:1987 & BS EN 942, table B.1. Free from decay, through splits and insect attack (including ambrosia beetle damage). Planed all round.
 - Specialist Supplier/Installer: The Oak Warehouse (or equal approved), 6 Central Trade Park, Saltney, Chester CH4 8SX; tel: 01244 676565 fax: 01244 67770; e-mail: contactus@oakwarehouse.co.uk.
 - Wood species: European Oak.
 - Appearance class/ Grade: Prime grade oak - To be fully seasoned, free of all heartwood, sap wood, fissures, shakes, and knots. Planed all round..
 - Finished face width: 100 mm.
 - Finished thickness: 15mm.
 - Edges: Square.
 - Moisture content at time of fixing: 8-10%.
 - Method of fixing/ joining: As recommended by specialist supplier/installer. SikaBond T52 adhesive applied to substrate surface as Section Z20 followed by secret fixed staples or nails (Primatec or equal approved) at 300mm minimum centres.
- Finish: Natural finish to be sealed on site as clause M60/110A.
- Accessories: Floor access panels as clause 340A.
- Other requirements:
 - Movement - Incorporate 1/2mm gap between each board joint using spacers to allow for expansion as recommended by specialist supplier/installer
 - To be laid in random lengths ranging between 1800mm & 3600mm in increments of 360mm..

GENERAL/ PREPARATION**210A WORKMANSHIP GENERALLY**

- Moisture content of timber supports: Same as oak boarding 8-10%.
- Methods of fixing and fasteners: As section Z20 where not specified.
- Protection: Protect from dirt, stains and damage using suitable coverings and boards laid as the work proceeds.

220 ENVIRONMENTAL CONDITIONS

- General requirements prior to starting work specified in this section: Building weathertight, wet trades completed and affected areas dried out.
- Temperature and humidity before, during and after installing strips/ boards: Maintained at levels approximating to those which will prevail after building is occupied.

230A HEATING SYSTEM FOR GALLERIES 38, 39 AND 40

- Operating mode: Continuous.
- Room temperatures for which the system has been designed: 19 - 22°C.
- Operation up to Completion: To allow for acclimatisation of all oak flooring (including section K20) and plywood (Section K11) and timber substrates prior to commencement of exhibition fitout]. .

230B HEATING SYSTEM FOR GALLERIES 36 & 37

- Operating mode: Intermittent.
- Room temperatures for which the system has been designed: 19 - 22°C. Subject to monitoring throughout contract period.
- Operation up to Completion: To allow for acclimatisation of all oak flooring (including section K20) and plywood (Section K11) and timber substrates prior to commencement of exhibition fitout]. .

- 240A AIR CONDITIONING SYSTEM TO GALLERY 40**
- Conditions for which the system has been designed to provide temperatures in the range 22 to 26°C and relative humidity level of 60% at 21°C wet bulb external conditions in summer; and temperatures in the range 19-22°C at -4.5°C saturated outside air temperature in winter.
 - Operation up to Completion: To allow for acclimatisation of all oak flooring (including section K20) and plywood (Section K11) and timber substrates.
- 240B AIR CONDITIONING SYSTEM TO GALLERIES 38 & 39**
- Conditions for which the system has been designed to provide temperatures in the range 22 to 29°C and relative humidity level of 43% at 21°C wet bulb external conditions in summer; and temperatures in the range 19-22°C at -4.5°C saturated outside air temperature in winter.
 - Operation up to Completion: To allow for acclimatisation of all oak flooring (including section K20) and plywood (Section K11) and timber substrates.
- 250A FIXTURES**
- Fixtures around which strip flooring is to be fixed: Installed before starting work specified in this section.
- 260A DRYNESS OF ADJACENT STONE SUBSTRATES TO FLOORING**
- Relative humidity above substrate when tested with a hygrometer to BS 8201, Appendix A (maximum): 75%.
 - Test points: All corners, around perimeter, and random points over area being tested.
 - Drying aids: Turned off for not less than four days before testing.
- 270 STRIP/ BOARD MOISTURE CONTENT TESTING**
- Test regime and equipment: Submit proposals.
 - Test results: Submit record of tests and results.
- 280 EXISTING WOOD FLOORING**
- Condition: Boards securely fixed and acceptably level. Protruding fasteners punched in or countersunk.
- 290A CONTROL SAMPLES**
- General: As clause K20/250A submit representative samples of the following for approval:
 - Typical sample of 'prime grade' oak boarding sealed as specified
 - Typical sample of proposed access panel brass lifting socket and spring catches
 - As clause K20/260A - Typical 1000X1000mm sample of new oak boarding installed with 1/2mm joint gaps and sealed. Panel to incorporate a typical working access panel as clause 360A including proposed brass lifting socket and spring catch mechanism.

FIXING/ FINISHING

- 325A FLOORING BATTENS TO GALLERY 40 PLANTROOMS AT LEVEL 6**
- Quality of timber: Free from decay, insect attack (except ambrosia beetle damage) and with no knots wider than half the width of the section.
 - Preservative treatment: As section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8.
 - Type/ Desired service life: Organic solvent/ 40 years .
 - Moisture content at time of laying: 12-14%.
- 330 FIXING BATTENS**
- General: Battens spaced evenly, packed or adjusted as necessary to give a true, level, finished surface, and fixed securely.

335A TREATED TIMBER

- Surfaces exposed by minor cutting and drilling: Treated with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer. Ensure all areas are fully dried prior to installation of plywood and oak boarding

340A ACCESS PANELS

- See drawings GI200E-BDP-A-2362 and 2801 for general layout and typical details.
- Panels to incorporate recessed flush brass lifting socket and to be mounted onto steel plate backing and spring catches to joist below. Submit samples.
- Size and position: Agree before fixing boards. NB Services boxes below floor level to be located accurately below agreed locations
- Additional noggings/ dwangs, battens, etc: Provide as necessary.

350A FIXING STRIPS/ BOARDS

- Strips/ Boards: Fixed securely to plywood substrate with flat, true surfaces free from undulations, splits, hammer marks, scratches and protruding fastenings.
- Movement of timber: Allowed for when positioning strips/ boards and fastenings to prevent cupping, springing, opening of joints or other defects.
- Heading joints (where permitted): End matched, butted and, where applicable, positioned centrally over supports and distributed across the flooring to achieve a random effect.
- Surface fixing: Not Allowed.

360A EXPANSION PROVISION

- Expansion gaps:
 - Edges of flooring: Parallel to lie of strips/ boards at abutment to stone flooring - 0mm;
 - Ends of flooring: At abutments to stone flooring - 0 mm;
- Spacer blocks and debris: Removed before fixing skirtings/ cover fillets.
- Intermediate expansion/ movement joints: 1/2mm gap to be incorporated between each individual board. Formed as recommended by flooring manufacturer/ supplier.
- At abutments to vertical walls - 10mm

370 FINISH TO FLOORING

- Exposed fastener heads: Punched or set below surface and filled with stopping to match wood.
- Strips/ Boards: Sanded to give a clean, smooth and flush surface free from score marks.
- Finish: Polyurethane seal as clause M60/110A .

M40

Stone/ concrete/ quarry/ ceramic tiling/ mosaic

Section Revision History

No.	Purpose	
A	Issued for Tender	16 Feb 2007

Clauses amended in this revision

This is the first revision stamp for this section. For all future revision stamps, details of all clauses amended at that revision will be included here.

M40 Stone/ concrete/ quarry/ ceramic tiling/ mosaic

To be read with Preliminaries/ General conditions.

TYPES OF TILING/ MOSAIC

- 115A TYPE S5 - YORK STONE TILING AS DOCUMENT GI200E-BDP-A-SPC-43-002
- Stone:
 - Name (traditional): Yorkstone .
 - Petrological family: Sandstone .
 - Colour: To match approved cleaned samples of existing adjacent stone within South Stair and Gallery 37 .
 - Finish: Honed or Fine rubbed - TBC subject to approved sample and slip resistance .
 - Stone Specialist Installer/Supplier: Paye Ltd. (or equal approved) , Stationmaster's House, Mottingham Station Approach, London SE9 4EL tel: 020 8857 9111. fax: 020 8857 9222 .
 - Quality: Free from vents, cracks, fissures, discoloration, or other defects deleterious to strength/ colour.
 - Size: Varying sizes to suit layout on drawings GI200E-BDP-A-2261 & 2362 (between max. 1200X900mm & min 900X250mm approximately subject to on site dimensions. .
 - Thickness: 30mm .
 - Other requirements: All surfaces to be sealed as clause M60/180A following installation .
 - Background/ Base: 2 no. layers of 12mm thick WBP plywood (as clause K11/315D) .
 - Preparation: Seal lower faces and all edges of plywood prior to installation .
 - Intermediate substrate: As clause 470A .
 - Bedding: Thin Bed Adhesive - Solid .
 - Manufacturer: ARDEX UK Limited (or equal approved), Homefield Road, Haverhill, Suffolk CB9 8QP UK. Tel: +44 (0)1440 714939 Fax: +44 (0)1440 716660. E-mail: info@ardex.co.uk
 - Product reference: [Ardex S20]
 - Application and Installation: [As recommended by manufacturer for installation onto specified intermediate substrate (see clause 470A)]
 - Joint width: 3 mm .
 - Grout:
 - Manufacturer: As adhesive manufacturer.
 - Product reference: [Ardex C2 with E101 admixture for flexibility. Colour TBC]
 - Application and Installation: [As recommended by manufacturer]
 - Movement joints: Movement joints required at perimeter wall abutments and around columns as recommended by stonework specialist supplier and installer (Submit proposals). Proprietary brass movement strips required at changes in type of substrate as clause 825 .
 - Accessories: - .

115B TYPE S6 - YORK STONE TILING AS DOCUMENT GI200E-BDP-A-SPC-43-002

- **Stone:**
 - Name (traditional): Yorkstone .
 - Petrological family: Sandstone .
 - Colour: To match approved cleaned samples of existing adjacent stone within South Stair and Gallery 37 .
 - Finish: Honed or Fine rubbed - TBC subject to approved sample and slip resistance .
 - Stone Specialist Installer/Supplier: Paye Ltd. (or equal approved) , Stationmaster's House, Nottingham Station Approach, London SE9 4EL tel: 020 8857 9111. fax: 020 8857 9222 .
 - Quality: Free from vents, cracks, fissures, discoloration, or other defects deleterious to strength/ colour.
 - Size: Varying sizes to suit layout on drawings GI200E-BDP-A-2261 & 2362 (between max. 1200X900mm & min 900X250mm approximately subject to on site dimensions. .
 - Thickness: 30mm .
 - Other requirements: All surfaces to be sealed as clause M60/180A following installation .
- **Background/ Base: New or existing concrete .**
 - Preparation:
 - New 75mm min. in-situ cast concrete base to full width/depth of doorway thresholds D4 and D12 as detailed on drawings. To be trowel finished. N.B. Formwork to be fully watertight and all measures to avoid any water leakage to ceilings and floors below to be carried out. Submit method statement before proceeding.
 - Existing: Following removal of existing finishes, existing concrete slab or screed to be made good to smooth even finish to allow for specified bedding. As clause 320 .
- **Intermediate substrate: - .**
- **Bedding: Sand Cement as clause 720 .**
 - Reinforcement: Not required
 - Adhesive: Not applicable
- **Joint width: 3 mm .**
- **Grout:**
 - Manufacturer: As Type S5 stone floor
 - Product reference: [Ardex C2 with E101 admixture for flexibility. Colour TBC]
 - Application and Installation: [As recommended by manufacturer]
- **Movement joints: Movement joints required at perimeter wall abutments and around columns as recommended by stonework specialist supplier and installer (Submit proposals). Proprietary brass movement strips required at changes in type of substrate as clause 825I .**
- **Accessories: - .**

115C TYPE S7 - YORK STONE TILING AS DOCUMENT GI200E-BDP-A-SPC-43-002

- Stone:
 - Name (traditional): Yorkstone .
 - Petrological family: Sandstone .
 - Colour: To match approved cleaned samples of existing adjacent stone within South Stair and Gallery 37 .
 - Finish: Honed or Fine rubbed - TBC subject to approved sample and slip resistance .
 - Stone Specialist Installer/Supplier: Paye Ltd. (or equal approved) , Stationmaster's House, Mottingham Station Approach, London SE9 4EL tel: 020 8857 9111. fax: 020 8857 9222 .
 - Quality: Free from vents, cracks, fissures, discoloration, or other defects deleterious to strength/ colour.
 - Size: Varying sizes to suit layout on drawings GI200E-BDP-A-2261 & 2362 (between max. 1200X900mm & min 900X250mm approximately subject to on site dimensions. .
 - Thickness: 30mm .
 - Other requirements: All surfaces to be sealed as clause M60/180A following installation .
- Background/ Base: 18mm thick WBP plywood (as clause K11/315E) .
 - Preparation: - .
- Intermediate substrate: As clause 470A .
- Bedding: Thin Bed Adhesive - Solid .
 - Manufacturer: ARDEX UK Limited (or equal approved), Homefield Road, Haverhill, Suffolk CB9 8QP UK. Tel: +44 (0)1440 714939 Fax: +44 (0)1440 716660. E-mail: info@ardex.co.uk
 - Product reference: [Ardex S20]
 - Application and Installation: [As recommended by manufacturer for installation onto specified intermediate substrate (see clause 470A)]
- Joint width: 3 mm .
- Grout:
 - Manufacturer: As adhesive manufacturer.
 - Product reference: [Ardex C2 with E101 admixture for flexibility. Colour TBC]
 - Application and Installation: [As recommended by manufacturer]
- Movement joints: Movement joints required at perimeter wall abutments and around columns as recommended by stonework specialist supplier and installer (Submit proposals) . .
- Accessories: - .

GENERALLY

210 SUITABILITY OF BACKGROUNDS/ BASES

- Background/ base tolerances: To permit specified flatness/ regularity of finished surfaces given the permissible minimum and maximum thickness of bedding.
- New background drying times (minimum):
 - Concrete walls: 6 weeks.
 - Brick/ block walls: 6 weeks.
 - Rendering: 2 weeks.
 - Gypsum plaster: 4 weeks.
- New base drying times (minimum):
 - Concrete slabs: 6 weeks.
 - Cement:sand screeds: 3 weeks.

215 FALLS IN THE BASES

- General: Give notice if falls are inadequate.

250A SAMPLES

- General: Submit representative samples of the following for approval:
 - Typical sample of Yorkstone slab/tile - to match existing stone (approved cleaned sample) in South Stair and Gallery 37.
 - Typical samples of proprietary brass movement joints/strips for each particular situation
 - Typical sample of approved Yorkstone with grout sample installed to match stone colour and sealed. .

260 CONTROL SAMPLES

- General: Complete sample areas, being part of finished work, in locations as follows:
 - At abutment to existing South stair step (cleaned sample) and gallery 37 stonework (cleaned sample) .

265A TESTS FOR SLIP RESISTANCE TO ALL STONE FLOORS

Carry out a test for Slip Resistance of approved trial sample of sealed stone. These are to be carried out by an approved Test Laboratory, who are to provide a report, in advance of the main works starting.

PREPARATION**310 EXISTING BACKGROUNDS/BASES GENERALLY**

- Efflorescence, laitance, dirt and other loose material: Remove.
- Deposits of oil, grease and other materials incompatible with the bedding: Remove.
- Tile, paint and other nonporous surfaces: Clean.
- Wet backgrounds: Dry before tiling.

320 EXISTING CONCRETE/SCREEDS

- Loose or hollow portions: Cut out.
- Making good: 1:3 cement:sand mortar applied over cement slurry bonding coat..

350A EXISTING STONE TILES

- Types S1, S2, S3 & S4 - Refer to document GI200E-BDP-A-SPC-43-003 for scope of temporary removal/reinstatement, repair and cleaning
- Types S6 & S7 - Refer to drawings LN08732/GI200E-BDP-A-2210 to 2283 for scope of permanent removal of existing stone finishes prior to installation of new stone.

355 OLD ADHESIVE RESIDUES ON CONCRETE/SCREED BASES

- Soft or unsound adhesive residues: Remove without damaging base.

370 NEW IN SITU CONCRETE

- Mould oil, surface retarders and other materials incompatible with bedding: Remove.

420 RAKING OUT FOR KEY

- Soft joints in existing masonry: Rake out to a depth of 13 mm (minimum).

438 PREPARING CONCRETE BASES FOR FULLY BONDED BEDDING

- Surface cement:sand matrix: Remove to expose coarse aggregate.
- Surface preparation: Suitable to achieve a full bond with bedding. Select from:
 - Keep well wetted for several hours. Remove free water then brush in a slurry bonding coat.
Slurry: SBR polymer modified cement.
 - Prepare, prime as necessary and apply a bonding agent.
Bonding agent: BBA certified SBR bonding agent.

460 SMOOTHING UNDERLAYMENT

- Type: Recommended by adhesive manufacturer.
- Condition: Allow to dry before tiling.

470A INTERMEDIATE SUBSTRATE

- Substrate: Tile matting .
 - Manufacturer: Schlüter-Systems Ltd., Units 4-5 Bardon 22, Beveridge Lane, Coalville, Leicestershire, LE67 1TE.
Phone: +44 1530 813396. Fax: +44 1530 813376. Email: sales@schluter.co.uk].
Product reference: DITRA matting .
 - Thickness: 3mm .
- Fixing system: Thin bed adhesive .
 - Manufacturer: ARDEX UK Limited (or equal approved as recommended by matting manufacturer) Homefield Road, Haverhill, Suffolk CB9 8QP UK.
Tel: +44 (0)1440 714939 Fax: +44 (0)1440 716660. E-mail: info@ardex.co.uk .
Product reference: Ardex AF 200 .
 - Application and Installation: As recommended by manufacturer .
 - Substrate surface: Secure, true and even.
- Joints: Close butt.
 - Treatment: As recommended by manufacturer .
- Penetrations: Seal.
- Accessories: None .

FIXING**510 FIXING GENERALLY**

- Colour/shade: Unintended variations within tiles for use in each area/room are not permitted.
 - Variegated tiles: Mix thoroughly.
- Adhesive: Compatible with background/base. Prime if recommended by adhesive manufacturer.
- Cut tiles: Neat and accurate.
- Fixing: Provide adhesion over entire background/base and tile backs.
- Final appearance: Before bedding material sets, make adjustments necessary to give true, regular appearance to tiles and joints when viewed under final lighting conditions.
- Surplus bedding material: Clean from joints and face of tiles without disturbing tiles.

530A SETTING OUT

- Joints: True to line, continuous and without steps.
 - Joints in floors: Parallel to the main axis of the space or specified features.
- Cut tiles: Minimise number, maximise size and locate unobtrusively.
- Movement joints: If locations are not indicated, submit proposals.
- Setting out of Stone Tiles: Drawing references: GI200E-BDP-A-2361 & 2362.
- Setting out of Movement Joints: Submit proposals.

540 LEVEL OF FLOOR TILING

- Permissible deviation in level from datum for Max. +/- 5mm generally. To line up accurately with existing levels at abutments to existing adjacent finishes and door thresholds etc .

550 FLATNESS/ REGULARITY OF TILING

- Sudden irregularities: Not permitted.
- Deviation of surface: Measure from underside of a 2 m straightedge placed anywhere on surface. The straightedge should not be obstructed by the tiles and no gap should be greater than 3 mm.

- 560 **LEVEL OF TILING ACROSS JOINTS**
- Deviation (maximum) between tile surfaces either side of any type of joint:
 - 1 mm for joints less than 6 mm wide.
 - 2 mm for joints 6 mm or greater in width.
- 580 **POROUS TILES**
- Tiles to be bedded in cement:sand: Soak in clean water for at least 30 minutes. Fix as soon as surface water has drained.
- 710 **THICK BED ADHESIVE - SOLID (FLOORS)**
- Application: Apply floated coat of adhesive to dry base and comb surface.
 - Tiling: Apply coat of adhesive to backs of tiles filling depressions or keys. Press tiles firmly onto position.
 - Finished adhesive thickness: Within range recommended by manufacturer.
- 720 **CEMENT|SAND BED (FLOORS)**
- Mortar bedding mix: 1:3 - 4 cement:sand.
 - Consistency: Stiff plastic.
 - Laying: Lay suitably small working areas of screeded bed. Compact thoroughly to level.
 - Finished bed thickness: 15 - 25 mm.
 - Tiling: Within two hours and before bedding sets, evenly coat backs of tiles with adhesive. Press tiles firmly into position.
 - Finished adhesive thickness: Within range recommended by manufacturer.

MOVEMENT JOINTS/ GROUTING/ COMPLETION

- 825 **STRIP MOVEMENT JOINTS AT DOOR THRESHOLDS**
- Manufacturer: Movement Joints (UK) Ltd PO Box 10, Wisbech, Cambridgeshire. PE13 4AN. Tel: 01945 450736. Fax 01945 450819. Web: www.mjuk.co.uk Email: info@mjuk.co.uk .
 - Product reference: Movement Joint 496/MS - Brass; 50mm deep .
 - Colour: Grey or Stone - TBC .
 - Joint width: 8 / 9 .
 - Fixing to base: Set into plywood (to suit stone level) and screwed at 300mm centres or set into adjacent bedding at correct level as recommended by the manufacturer .
 - Joints: Extend through tiles and bedding to base.
- 875 **GROUTING**
- Sequence: Grout when bed/adhesive has set sufficient to prevent disturbance of tiles.
 - Joints: 6 mm deep (or depth of tile if less). Free from dust and debris.
 - Grouting: Fill joints completely, tool to profile, clean off surface. Leave free from blemishes.
 - Profile: Flush.
 - Polishing: When grout is hard, polish tiling with a dry cloth.
- 885 **COLOURED GROUT**
- Staining of tiles: Not permitted
 - Evaluating risk of staining: Apply grout to a few tiles in a small trial area. If discoloration occurs apply a protective sealer to tiles and repeat trial.

M50

Rubber/ plastics/ cork/ lino/ carpet tiling/ sheeting

Section Revision History

No.	Purpose	
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Clauses amended in this revision

This is the first revision stamp for this section. For all future revision stamps, details of all clauses amended at that revision will be included here.

M50 Rubber/ plastics/ cork/ lino/ carpet tiling/ sheeting

To be read with Preliminaries/ General conditions.

TYPES OF COVERING

155A TYPE V1 - ANTISTATIC VINYL SHEET FLOORING

- Location: As location drawings in document GI200-BDP-A-SPC-43-002.
- Base: New plywood sheeting as Clause K11/315C.
 - Preparation: Apply Ardex Feather Edge to all board joints..
- Flooring Roll: Homogenous PVC to BS EN 649.
- Flooring roll: PVC to BS EN 13553.
 - Manufacturer: Gerflor Ltd (or equal approved), Wedgnock House, Wedgnock Lane, Warwick, CV34 5AP. Tel 01926 401500, Fax 01926 401647. Email: contractuk@gerflor.com .
 - Product reference: Mipolam Robust.
 - Identity code: EL7.
 - BS EN 685 class: 43.
 - Width: 2000 mm.
 - Thickness: 2.5mm.
 - Colour/ pattern: TBC.
- Adhesive: As recommended by manufacturer.
- Seam welding: Hot welding with complimentary coloured rod.
- Accessories: To be coordinated with acoustic seals at plantroom doors.
- Finishing: As Clause 825 or recommended by sheet manufacturer.
- Other requirements: Gradus nosings/trim to edge of openings in floors.

GENERAL REQUIREMENTS

210 WORKMANSHIP GENERALLY

- Base condition after preparation: Rigid, dry, sound, smooth and free from grease, dirt and other contaminants.
- Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from air bubbles, rippling, adhesive marks and stains.

220 SAMPLES

- Covering samples: Before placing orders, submit representative sample of each type.

250 LAYOUT - ROLL MATERIALS

- Setting out of seams: Before placing orders agree setting out for sheeting types M50/ 155A

330 COMMENCEMENT

- Required condition of works prior to laying materials:
 - Building is weathertight and well dried out.
 - Wet trades have finished work.
 - Paintwork is finished and dry.
 - Conflicting overhead work is complete.
 - Floor service outlets, duct covers and other fixtures around which materials are to be cut are fixed.
- Notification: Submit not less than 48 hours before commencing laying.

340 CONDITIONING

- Prior to laying: Condition materials by unpacking and separating in spaces where they are to be laid. Maintain resilient flooring rolls in an upright position. Unroll carpet and keep flat on a supporting surface.
- Conditioning time and temperature (minimum): As recommended by manufacturer with time extended by a factor of two for materials stored or transported at a temperature of less than 10°C immediately prior to laying.

350 ENVIRONMENT

- Temperature and humidity: Before, during and after laying, maintain approximately at levels which will prevail after building is occupied.
- Ventilation: Before during and after laying, maintain adequate provision.

PREPARING BASES**410 NEW BASES**

- Suitability of bases and conditions within any area: Commencement of laying of coverings will be taken as acceptance of suitability.

430 NEW WET LAID BASES

- Base drying aids: Not used for at least four days prior to moisture content testing.
- Base moisture content test: Carry out in accordance with BS 5325, Annexe A or BS 8203, Annexe A.
 - Locations for readings: In all corners, along edges, and at various points over area being tested.
- Commencement of laying coverings: Not until all readings show 75% relative humidity or less.

440 SUBSTRATES TO RECEIVE THIN COVERINGS

- Trowelled finishes: Uniform, smooth surface free from trowel marks and other blemishes. Abrade suitably to receive specified floor covering material.

460 SMOOTHING/ LEVELLING UNDERLAYMENT COMPOUND

- Type: Ardex UK Ltd, Arditec smoothing compound..
- Selection: As recommended by covering manufacturer.

LAYING COVERINGS**620 COLOUR CONSISTENCY**

- Finished work in any one area/ room: Free from banding or patchiness.

640 ADHESIVE FIXING GENERALLY

- Adhesive: Type to be as specified, recommended by covering/ underlay manufacturer or as approved.
- Primer: Use and type as recommended by adhesive manufacturer.
- Application: As necessary to achieve good bond.
- Finished surface irregularities: Trowel ridges and high spots caused by particles on the substrate not acceptable.

650 SEAMS

- Patterns: Matched.
- Joints: Tight without gaps.

670 BORDERS/ FEATURE STRIPS IN SHEET MATERIAL

- Application: Cut strips along length of sheet to prevent curl.
 - Corners: Mitre joints.

- 680 SEAM WELDING COVERINGS**
- Commencement: Not before a period of 24 hours after laying, or until adhesive has set.
 - Joints: Neat, smooth, strongly bonded, flush with finished surface.
- 720 DOORWAYS**
- Joint location: On centre line of door leaf.
- 750 STAIR NOSINGS/ TRIM**
- Manufacturer: Gradus Limited or equal approved, Park Green, Macclesfield, Cheshire SK11 7LZ, Tel: 01625 428922, Fax: 01625 433949 Email: sales@gradusworld.com Web: <http://www.gradusworld.com>.
 - Product reference: TX511.
 - Material/ finish: PVC-U with PVC-U inserts.
 - Fixing: Secure, level with mitred joints. Adjusted to suit thickness of covering with continuous packing strips of hardboard or plywood. Nosings and packing strips bedded in gap-filling adhesive recommended by nosing manufacturer.
 - Screw fixing with matching plugs: Not required.
- 750A NOSINGS/ TRIM TO EDGE OF RISER OPENING IN FLOOR**
- Manufacturer: Gradus Limited (or equal approved), Park Green, Macclesfield, Cheshire SK11 7LZ, Tel: 01625 428922, Fax: 01625 433949 Email: sales@gradusworld.com Web: <http://www.gradusworld.com>.
 - Product reference: TX511.
 - Material/ finish: PVC-U with PVC-U inserts.
 - Fixing: Secure, level with mitred joints. Adjusted to suit thickness of covering with continuous packing strips of hardboard or plywood. Nosings and packing strips bedded in gap-filling adhesive recommended by nosing manufacturer.
 - Screw fixing with matching plugs: Not required.
- 770 SKIRTINGS**
- Types: Antistatic PVC.
 - Manufacturer: As sheet manufacturer.
 - Product reference: S466/2.
 - Fixing: Secure with top edge straight and parallel with floor.
 - Corners: Mitre joints.
- 780 TRAFFICKING AFTER LAYING**
- Covering types: ALL.
 - Traffic free period: as recommended by sheet manufacturer.
- COMPLETION**
- 825 FINISHING NON-TEXTILE ANTISTATIC FLOORING**
- Cleaning operations:
 - Wash floor with water containing neutral (pH 6-9) detergent. If necessary, lightly scrub heavily soiled areas.
 - Rinse with clean water, removing surplus to prevent damage to adhesive. Allow to dry for not less than 24 hours before testing.
- 880 WASTE**
- Spare covering material: Retain suitable material for patching. On completion submit pieces for selection. Hand over selected pieces to Employer.

M60
Painting/clear finishing

Section Revision History

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M60 Painting/clear finishing

To be read with Preliminaries/General conditions.

COATING SYSTEMS

110A POLYURETHANE FLOOR SEAL ON NEW AND EXISTING OAK TIMBER FLOORING

- Manufacturer: BonaKemi Limited 15 Cofferdge Close, Stony Stratford, Milton Keynes, Buckinghamshire MK11 1BY Tel. 01908 567800.
 - Product reference: Traffic Matt.
- Surfaces: Unsealed natural oak finish.
 - Preparation: All preparation / installation to be in accordance with Bonakemi method statement/recommendations. Generally allow for: Sand back to bare wood finishing with 120grit] .
- Initial coats: To Manufacturers recommendations. Generally allow for: One coat of Bonakemi Prime @ 8m²/ltr .
- Finishing coats: To Manufacturers recommendations. Generally allow for: Threecoats @ 8m²/ltr .

110B TYPE F1 - HEAVY DUTY EPOXY FLOOR PAINT

- Manufacturer: Tremo Ltd Tel. 01753 691696 Fax.01753 822640.
 - Product reference: Drycote 100.
- Surfaces: New trowel finished concrete.
 - Preparation: As Clause 400A .
- Initial coats: Refer to manufacturer's recommendations regarding substrate moisture content at time of application. Prime with either Tremco Epoxycote WD or Treadfast One Coat Universal as appropriate .
- Finishing coats: Two coats of Tremco Drycote 100 Solvent Free. To be applied by approved specialist .
- Other requirements: Finish to incorporate slip resistance aggregate (Rapid Sand No.8). Before applying contractor to ensure moisture content of concrete substrate does not exceed the manufacturer's recommendations.

110C TYPE F2 - HEAVY DUTY EPOXY FLOOR PAINT

- Manufacturer: Tremo Ltd Tel. 01753 691696 Fax.01753 822640.
 - Product reference: Drycote 100.
- Surfaces: New plywood decking.
 - Preparation: As Clause 401A .
- Initial coats: Refer to manufacturer's recommendations regarding substrate moisture content at time of application. Prime with either Tremco Epoxycote WD or Treadfast One Coat Universal as necessary. .
- Finishing coats: Two coats of Tremco Drycote 100 Solvent Free. To be applied by approved specialist .
- Other requirements: Finish to incorporate slip resistance aggregate (Rapid Sand No.8) Before applying contractor to ensure moisture content of concrete substrate does not exceed the manufacturer's recommendations.

- 180A FLOOR SEALANT TO STONE FLOORS ALL STONE FINISHES (S1-S8 INCLUSIVE)**
- **Manufacturer:** Tensid UK Plc Aquila House (OR EQUAL APPROVED), 70a Wheatash Road, Addlestone, Surrey KT15 2ES. Tel No: 01932 564133. Fax No: 01932 562046; E-mail info@tensid.com Web: www.tensid.com
 - **Product reference:** Prosoco STMP Stone Tile Masonry Protection.
 - **Surfaces:** Sandstone.
 - **Preparation:** Protect surrounding surfaces and avoid wind drift. Remove all dirt and surface contaminants with Prosoco STMC Masonry cleaner, rinse thoroughly and allow to dry before application of Prosoco STMP..
 - **Initial coats:** As recommended by manufacturer.
 - **Number of coats:** For porous material apply initial STMP coat.
 - **Finishing coats:** As recommended by manufacturer.
 - **Number of coats:** Apply final coat of STMP wet on wet to first coat.

GENERALLY

- 215 HANDLING AND STORAGE**
- **Coating materials:** Deliver in sealed containers, labelled clearly with brand name, type of material and manufacturer's batch number.
 - **Materials from more than one batch:** Store separately. Allocate to distinct parts or areas of the work.
- 220 COMPATIBILITY**
- **Coating materials selected by contractor:**
 - Recommended by their manufacturers for the particular surface and conditions of exposure.
 - Compatible with each other.
 - Compatible with and not inhibiting performance of preservative/fire retardant pretreatments.
- 280 PROTECTION**
- **'Wet paint' signs and barriers:** Provide where necessary to protect other operatives and general public, and to prevent damage to freshly applied coatings.
- 300 CONTROL SAMPLES**
- **Sample areas of finished work:** Carry out, including preparation, as follows:

Types of coating	Nature of sample
M60/ 110A .	Applied to separate control sample panel submitted to CA for approval (see sections K20/21 .
 - **Approval of appearance:** Obtain before commencement of general coating work.
- 320 INSPECTION BY COATING MANUFACTURERS**
- **General:** Permit manufacturers to inspect work in progress and take samples of their materials from site if requested.

PREPARATION

400A PREPARATION GENERALLY

- Standard: To BS 6150, Section 4.
- Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
- Substrates: Sufficiently dry in depth to suit coating.
- Efflorescence salts: Remove.
- Dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
- Surface irregularities: Abrade to a smooth finish.
- Joints, cracks, holes and other depressions: Fill with stoppers/ fillers. Work well in and finish off flush with surface. Abrade to a smooth finish.
- Dust, particles and residues from abrasion: Remove.
 - Fill with stoppers/ fillers. Work well in and finish off flush with surface.
 - Abrade to a smooth finish.
- Water based stoppers and fillers:
 - Apply before priming unless recommended otherwise by manufacturer.
 - If applied after priming: Patch prime.
- Oil based stoppers and fillers: Apply after priming.
- Doors, opening windows and other moving parts:
 - Ease, if necessary, before coating.
 - Prime resulting bare areas.

401A PREPARATION TO PLYWOOD FLOOR SUBSTRATE

- Generally as Clause 400A
- Ensure all joints between plywood boarding are filled with epoxy filler and abraded to a smooth finish.

461 PREVIOUSLY COATED WOOD

- Degraded or weathered surface wood: Abrade to remove.
- Degraded substrate wood: Repair with sound material of same species.
- Exposed resinous areas and knots: Apply two coats of knotting.

471 PREPRIMED WOOD

- Areas of defective primer: Abrade back to bare wood and reprime.

481 UNCOATED WOOD

- General: Abrade to a smooth, even finish with arrises and moulding edges lightly rounded or eased.
- Heads of fasteners: Countersink sufficient to hold stoppers/fillers.
- Resinous areas and knots: Apply two coats of knotting.

560 UNCOATED CONCRETE

- Release agents: Remove.

570 UNCOATED MASONRY/ RENDERING

- Loose and flaking material: remove.

622 ORGANIC GROWTHS

- Dead and loose growths and infected coatings: Scrape off and remove from site.
- Treatment biocide: Apply appropriate solution to growth areas and surrounding surfaces.
- Residual effect biocide: Apply appropriate solution to inhibit re-establishment of growths.

APPLICATION**711 COATING GENERALLY**

- Application standard: To BS 6150, Section 5.
- Conditions: Maintain suitable temperature, humidity and air quality during application and drying.
- Surfaces: Clean and dry at time of application.
- Thinning and intermixing of coatings: Not permitted unless recommended by manufacturer.
- Overpainting: Do not paint over intumescent strips or silicone mastics.
- Priming coats:
 - Thickness: To suit surface porosity.
 - Application: As soon as possible on same day as preparation is completed.
- Finish:
 - Even, smooth and of uniform colour.
 - Free from brush marks, sags, runs and other defects.
 - Cut in neatly.

Section Revision History

No.	Purpose	
A	Issued for Tender	16 Feb 2007

Clauses amended in this revision

This is the first revision stamp for this section. For all future revision stamps, details of all clauses amended at that revision will be included here.

Z20 Fixings/ adhesives

To be read with Preliminaries/ General conditions.

110 FIXINGS GENERALLY

- Integrity of supported components: Types, sizes and quantities of fasteners/ packings and spacings of fixings selected to retain supported components without distortion or loss of support.
- Components/ substrates/ fasteners of dissimilar metals: Fixed with isolating washers/ sleeves to avoid bimetallic corrosion.
- General usage: To recommendations of fastener manufacturers and/ or manufacturers of components, products or materials fixed and fixed to.
- Appearance: As approved samples.

140 FIXINGS THROUGH FINISHES

- Penetration of fasteners/ plugs into substrate: To achieve a secure fixing.

150 PACKINGS

- Function: To take up tolerances and prevent distortion of materials/ components.
- Materials: Noncompressible, noncorrodible, rot proof.
- Locations: Not within zones to be filled with sealant.

170 NAILED TIMBER FIXINGS

- Nails:
 - Steel: To BS 1202-1 or BS EN 10230-1
 - Copper: To BS EN 1202-2.
 - Aluminium: To BS 1202-3.
- Penetration: Fully driven in without splitting or crushing timber.
- Surfaces visible in completed work: Nail heads punched below surfaces.
- Nailed timber joints: Two nails per joint (minimum), opposed skew driven.

170A NAILED/STAPLED TIMBER FIXINGS TO OAK FLOOR BOARDS

- Nails/staples: As recommended by specialist oak flooring supplier/installer:
 - Steel: To BS 1202-1 or BS EN 10230-1
 - Copper: To BS EN 1202-2.
 - Aluminium: To BS 1202-3.
- Penetration: Fully driven in without splitting or crushing timber.
- Surfaces visible in completed work: Nail heads punched below surfaces.
- Nailed/stapled timber joints: As recommended by specialist oak flooring supplier/installer. Secret fixed through board tongue to joist below at each joint.

180 FIXINGS TO MASONRY

- Fasteners:
 - Light duty: Plugs and screws.
 - Heavy duty: Expansion anchors or chemical anchors.

210 PLUGS

- Type: Proprietary types suited to background, loads to be supported and conditions expected in use.

- 220 **SCREW FIXINGS**
- Screws: To BS 1210.
 - Finished level of countersunk screw heads:
 - Exposed: Flush with timber surface.
 - Concealed (holes filled/ stopped): Sunk minimum 2 mm below surface.
 - Washers and screw cups: Of same material as screw.
- 230 **PELLETED COUNTERSUNK FIXINGS**
- Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
 - Pellets: Cut from matching timber, grain matched and glued in to full depth of hole.
 - Finished level of pellets: Flush with surface.
- 240 **PLUGGED COUNTERSUNK FIXINGS**
- Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
 - Plugs: Glued in to full depth of hole.
 - Finished level of plugs: Projecting above surface.
- 250 **POWDER ACTUATED FIXING SYSTEMS**
- Powder actuated fixing tools: To BS 4078-2 and Kitemark certified. Operatives trained and certified as competent by tool manufacturer.
 - Types of fastener, accessories and consumables: As recommended by tool manufacturer.
 - Protective coating to exposed fasteners used externally or in other locations subject to dampness: Zinc rich primer to fastener heads.
- 510 **ADHESIVES**
- Storage/ Usage: In accordance with manufacturer's and statutory requirements.
 - Surfaces: Clean. Regularity and texture adjusted to suit bonding and gap filling characteristics of adhesive.
 - Finished adhesive joints: Fully bonded. Free of surplus adhesive.