

# Diocesan Advisory Committee for the Care of Churches

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The Diocese of  
**Canterbury**



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20 August 2015

*Dear Lionel*

## CONFIRMATION OF DAC ADVICE MAIDSTONE, ST PHILIP – UPGRADING OF TOILET FACILITIES

I am writing to inform you that the Standing Committee of the DAC has agreed the Committee's formal advice on the above proposals, which is set out in the enclosed notification of advice. Please read the document carefully to note any comments, which the Committee may have made, or any conditions which may be linked to the Committee's decision. **Please take care to ensure that these documents are not lost or mislaid. We are increasingly finding that PCCs are submitting alternative copies of papers not bearing the DAC stamp and this is resulting in delays in the processing of faculty casework.**

In addition to the notification you will find enclosed stamped copies of the paperwork seen by the DAC and upon which the Committee's advice is based.

A copy of the notification has been sent direct to the Diocesan Registry (tel: 020 7593 5110) who will send you within the next few days a copy of the faculty petition and public notices.

Please do not hesitate to contact the Diocesan Registry or me if you have any questions.

*Best wishes*

*I*

DAC/2015/96

Form 2  
(Rule 3.6)  
Diocesan Advisory Committee  
Notification of Advice



The Diocese of  
**Canterbury**

 THE CHURCH  
OF ENGLAND

**This notification constitutes advice only and does not give you permission to carry out the works or other proposals to which it relates. A faculty must be obtained from the court before the works or proposals may lawfully be carried out.**

**In the diocese of Canterbury**

**Parish of Maidstone, All Saints with St Philip and St Stephen, Tovil**

**Church of St Philip**

The church is not listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 and is not in a conservation area.

At a meeting of the Standing Committee of the Diocesan Advisory Committee

The following works or other proposals were considered:

An upgrading of the toilet facilities within the present toilet enclosure. All in accordance with a Statement of Need, a Preliminaries and Schedule of Works dated 20 July 2015, a Schedule of Work dated 22 July 2015, a Reference Specification dated 20 July 2015 and two supporting drawings.

The Committee **recommends** the works or proposals for approval by the court subject to the following proviso:

- (1) The electrical installation must comply with BS7671 – 2008 Requirements for Electrical Installations (IEE Wiring Regulations 17<sup>th</sup> Edition) and the best practice set out in the Council for the Care of Churches booklet 'Wiring of Churches' ISBN 0-7151-7571-8 (1997).

**This advice does not constitute authority for carrying out the works or proposals and a faculty is required.**

In the opinion of the Committee the work or part of the work proposed is not likely to affect—

- the character of the church as a building of special architectural or historic interest
- the archaeological importance of the church
- archaeological remains existing within the church or its curtilage

Because of the nature of the proposals, consultation has not been held with any of the statutory consultees.

**This advice is valid for 24 months from the date given below.**

Signed:

Date:

20/8/15

Secretary to the Diocesan Advisory Committee



Footnote:-

The insurance policy for the church building will include a condition that the PCC notifies the insurer of any activity which might increase the insured risk. Obvious examples are alterations to the wiring installation, the erection of any scaffolding or any disruption to the fabric of the building. The faculty petition includes a question as to whether the church's insurers have been informed about the work which is to be carried out and the Diocesan Registrar will need to see a copy of the letter from the insurers confirming that they have been notified.

The Parish of All Saints with St Philip, Maidstone and St Stephen, Tovil.

**St Philip's Church and Centre, Waterloo Street, Maidstone, Kent ME15 7UH**

**Statement of Need for building to be changed to include a Toilet for the Disabled.**

**St Philip's Centre proposes to add a toilet for people with disabilities. The Community Centre is well used by many local residents and organisations, and would enable wheel chair users and those with disabilities to attend their chosen activities with more ease.**

**Accessibility is paramount for us to continue to be inclusive to all.**

**With modern up to date facilities for our centre users we hope to reach out even further to our growing community.**

**Mollie Neaves,**

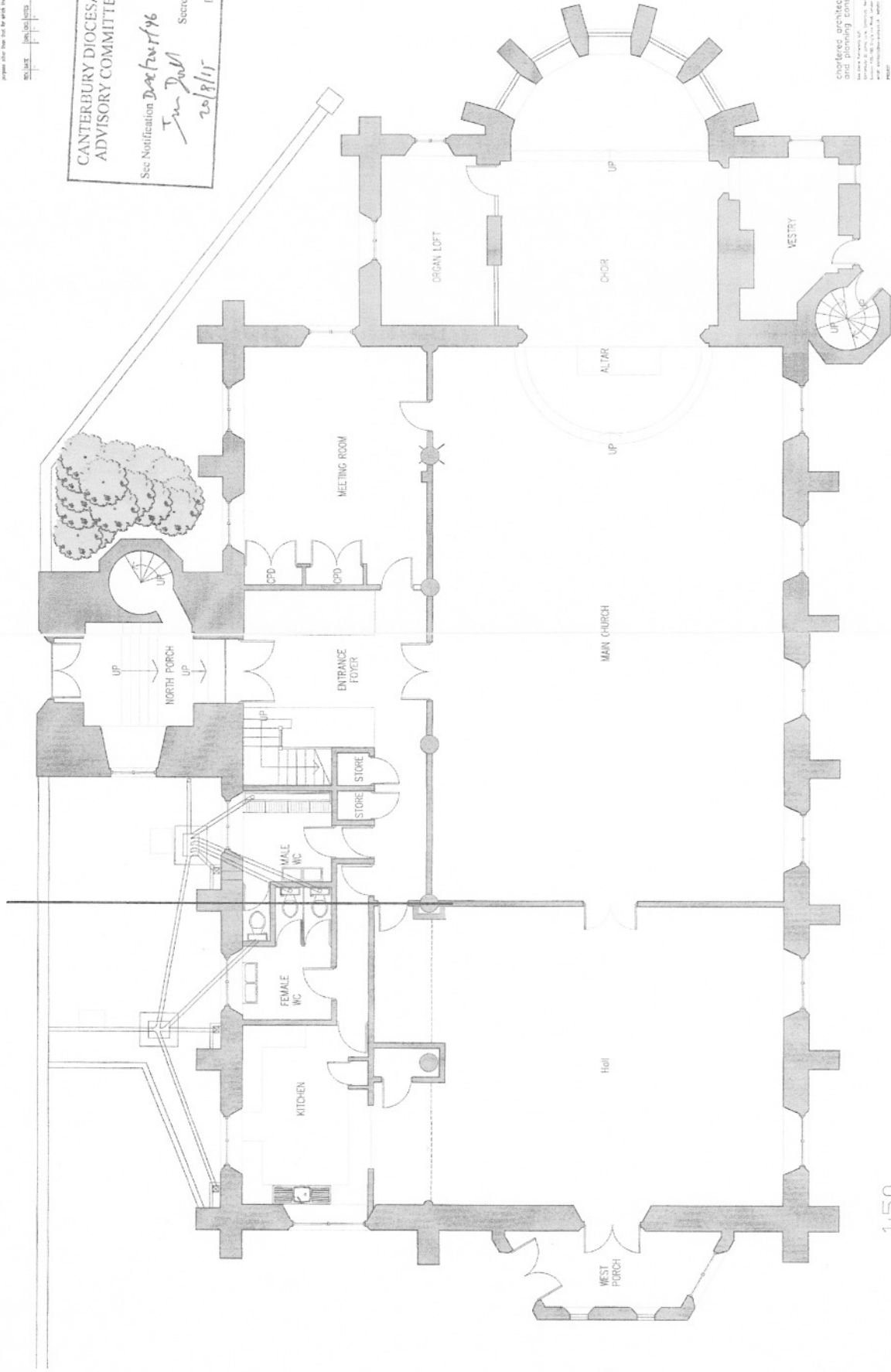
**Churchwarden.**

All items photographed are the property of the client and are not to be used for any other purpose without the written consent of the client.

Scale: 1:50

CANTERBURY DIOCESAN  
ADVISORY COMMITTEE

See Notification Date: 20/02/15  
*Tim Dull* Secretary  
 Date



chartered architects  
and planning consultants

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 Tel: 01392 263100 Fax: 01392 263101  
 www.rpsgroup.co.uk

Project: St Philip's Methodist War & PC  
 Date: 09/11/2013  
 Drawing No: 06917-WD-20-01  
 Drawing Title: Existing Ground Floor Plan  
 Scale: 1:50  
 Drawing No: 06917-WD-20-01

1:50  
 Existing Ground Floor Plan

CANTERBURY DIOCESAN  
ADVISORY COMMITTEE

See Notification *Dacholt/96*

*Tan Dall*  
*20/8/15*

Secretary

Date

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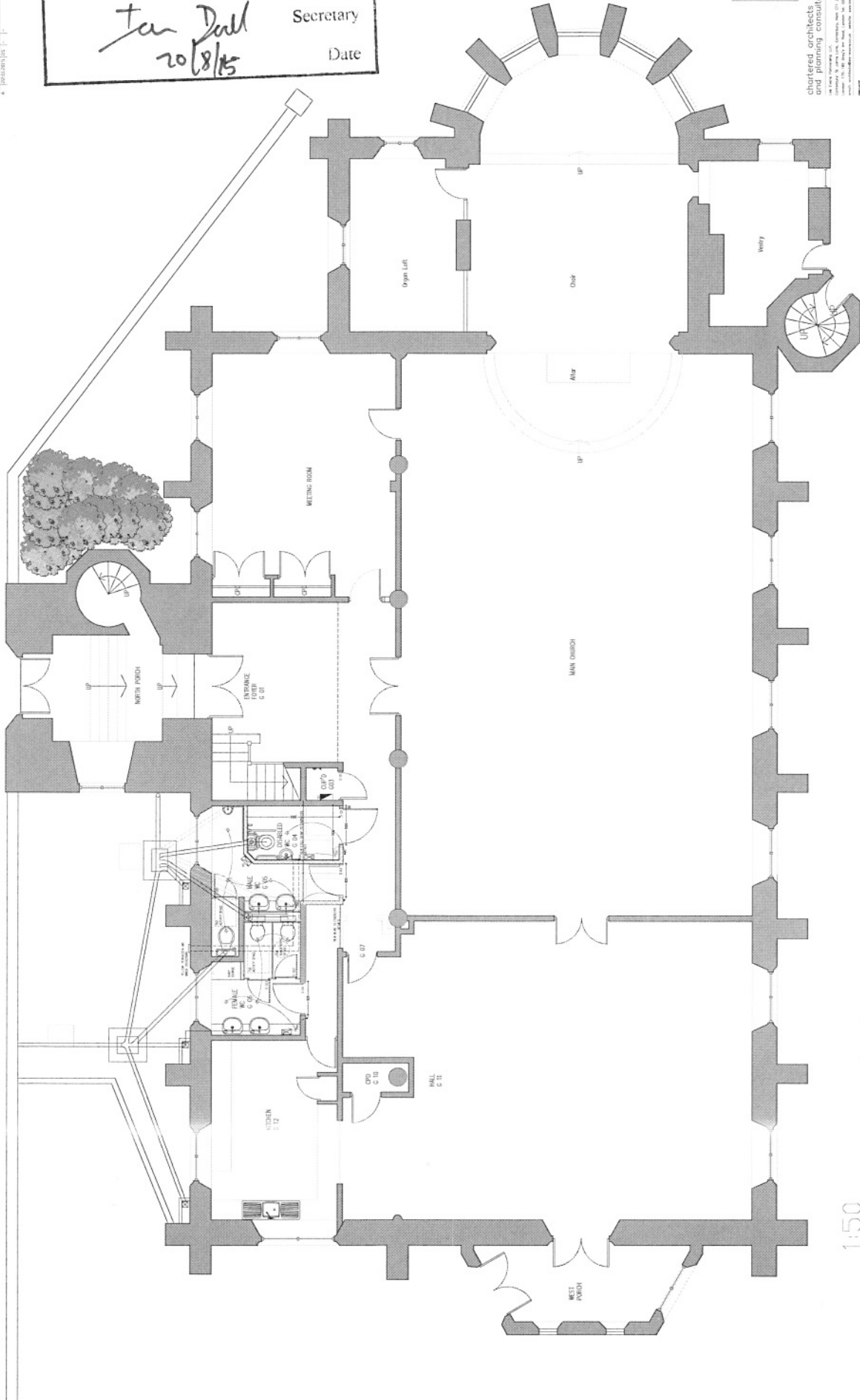
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1/0/2015/1/15



chartered architects  
and planning consultants

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Proposed Ground Floor Plan

**St Philips Church and Community Centre Schedule  
of works - Reference Specification**

20 Jul 2015

CANTERBURY DIOCESAN ADVISORY COMMITTEE	
See Notification	DAC/2015/96
<i>In Deed</i>	Secretary
20/8/15	Date

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## **A90 GENERAL TECHNICAL REQUIREMENTS**

### **GENERAL**

#### **Precedence**

General: Where, and to the extent that, documents conflict the following orders of precedence apply:

- Schedules of work override preliminaries, which override contract drawings, which override the Reference specification.
- Work sections of the Reference specification override A90.

Conflict in the documents: Give notice.

#### **Definitions and interpretations - general**

Employer's Representative: The person nominated in the Contract as Employer's Representative, Architect, Contract Administrator or Project Manager.

Reference specification: Not all clauses in the Reference specification apply to this project. If in doubt about the applicability of a clause, obtain instructions.

Communication: When required to communicate – including advise, inform, submit, give notice, instruct, agree, confirm, seek or obtain information, consent or instructions, or make arrangements – do so in writing to the Employer's Representative.

Responses from the Employer's Representative: Do not proceed until response has been received.

#### **Definitions and interpretations – products and work**

Remove:

- Disconnect, dismantle as necessary and take out the designated products or work and associated accessories, fastenings, supports, linings and bedding materials. Dispose of unwanted materials.
- Excludes taking out and disposing of associated pipework, wiring, ductwork or other services.

Keep for reuse:

- Do not damage designated products or work. Clean off bedding and jointing materials.

Make good:

- Execute local remedial work to designated work. Make secure, sound and neat.
- Excludes redecoration and/ or replacement.

Repair:

- Execute remedial work to designated products. Make secure, sound and neat.
- Excludes redecoration and/ or replacement.

Refix: Fix removed products.

Replace: Supply and fix new products matching those removed. Execute work to match original new state of that removed.

Ease: Adjust moving parts of designated products or work to achieve free movement and good fit in open and closed positions.

Match existing: Provide products and work of the same appearance and features as the original, excluding ageing and weathering. Make joints between existing and new work as inconspicuous as possible.

#### **Documents**

Currency: References to published documents are to the editions, including amendments, current on the date of the Invitation to tender.

Services drawings: Diagrammatic, except to the extent that figured dimensions are given or calculable.

Dimensions: Do not rely on scaled dimensions.

## **COMPLIANCE**

### **Compliance generally**

Submittals, samples, inspections and tests: Undertake to suit the Works programme. Do not conceal, or proceed with, affected work until compliance with requirements is confirmed.

Compliance with proprietary specifications: Retain on site evidence that the proprietary product specified has been supplied.

Compliance with performance specifications: Submit evidence of compliance, including test reports indicating properties tested, pass/ fail criteria, test methods and procedures, test results, identity of testing agency, test dates and times, identities of witnesses, and analysis of results.

### **Design and production documentation**

Design compliance: Submit certification that design complies with documented requirements.

Documentation:

- Draft: Submit complete design and production documentation.
  - Final: Submit sufficient copies for distribution to affected parties. Keep at least one copy on site.
- Space requirements: Check space requirements of products or work indicated diagrammatically in the contract documents. Submit a report on consequent variations needed to the design.

Drawings: Include dimensions.

### **Authorities and statutory undertakers**

Approvals: Submit evidence of approvals of relevant authorities and statutory undertakers.

### **Product samples**

Complying samples: Retain in good, clean condition on site.



## PRODUCTS AND EXECUTION

### General quality

Products generally: New. Proposals for recycled products will be considered.

- Supply of each product: From the same source or manufacturer.
- Whole quantity of each product required to complete the Works: Consistent kind, size, quality and overall appearance.
- Product tolerances: Where critical, measure a sufficient quantity to determine compliance.

Execution generally: Fix, apply, install or lay products securely, accurately, plumb, neatly and in alignment.

- Colour batching: Do not use different colour batches where they can be seen together.
- Dimensions: Check on-site dimensions.
- Finished work: Not defective, e.g. not damaged, disfigured, dirty, faulty, or out of tolerance.

### Sizes

General dimensions: Nominal.

Cross section dimensions of timber: Finished dimensions.

### Substitution

Products: If an alternative product to that specified is proposed, obtain approval before ordering the product.

Work: If alternative work to that specified is proposed, obtain approval before execution.

Reasons: Submit reasons for the proposed substitution.

Documentation: Submit relevant information, including:

- manufacturer and product reference;
- cost;
- availability;
- relevant standards;
- performance;
- function;
- compatibility of accessories;
- proposed revisions to drawings and specification;
- compatibility with adjacent work;
- appearance; and
- copy of warranty/ guarantee.

Alterations to adjacent work: If needed, advise scope, nature and cost.

Manufacturers' guarantees: If substitution is accepted, submit.

### Incomplete documentation

General: Where and to the extent that products or work are not fully documented, they are to be:

- Of a kind and standard appropriate to the nature and character of that part of the Works where they will be used.
- Suitable for the purposes stated or reasonably to be inferred.

### Manufacturers' recommendations

General: Comply with manufacturer's current printed recommendations and instructions.

Changes to recommendations or instructions since close of tender: Submit details.

Manufacturers' current recommendations and instructions: Keep copies on site.

Ancillary products and accessories: Use those supplied or recommended by main product manufacturer.

Agreement certified products: Comply with limitations, recommendations and requirements of relevant valid certificates.

### Defects in existing work

Reporting undocumented defects: When discovered, immediately give notice. Do not proceed with affected related work until response has been received.

Documented remedial work: Do not execute work which may:

- hinder access to defective products or work; or
- be rendered abortive by remedial work.

### Accuracy, appearance and fit

Tolerances and dimensions: If likely to be critical to execution or difficult to achieve, as early as possible either:

- submit proposals; or
- arrange for inspection of appearance of relevant aspects of partially finished work.

General tolerances (maximum): To BS 5606, tables 1 and 2.

Structural floor design level tolerances (maximum):

- Floors which are to be self-finished, and floors to receive sheet or tile finishes directly bedded in adhesive:  $\pm 10$  mm.
- Floors to receive dry board/ panel work with little or no tolerance on thickness:  $\pm 10$  mm.
- Floors to receive fully bonded screeds/ toppings/ beds:  $\pm 15$  mm.
- Floors to receive unbonded or floating screeds/ beds:  $\pm 20$  mm.

**Services runs**

General: Provide adequate space and support for services, including unobstructed routes and fixings.

Services inaccessible after installation: Submit proposals for future location and identification of runs and fittings.

Fixing of services: Submit typical details of locations, types and methods of fixing of services to fabric.

**Spares**

General: Supply designated spares in their original packaging.

## **D20 EXCAVATING AND FILLING**

### **GENERAL**

#### **Cross-reference**

General: Read with A90 General technical requirements.

### **PRODUCTS**

#### **Herbicide for treating topsoil before stripping**

Type: Suitable translocated nonresidual herbicide.

#### **Proposed fill materials**

Details: Prior to commencing filling, submit full details and test reports of proposed fill materials demonstrating compliance with specification, including:

- Imported fill: Type and source.
- Material excavated on site: Proposals for processing and reuse.

#### **Hazardous, aggressive or unstable fill materials**

General: Do not use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling.

Do not use material that is:

- Frozen or containing ice.
- Organic.
- Contaminated or noxious.
- Susceptible to spontaneous combustion.
- Likely to erode or decay and cause voids.
- With excessive moisture content, slurry, mud or from marshes or bogs.
- Clay of liquid limit exceeding 80 and/ or plasticity index exceeding 55.
- Defined in Highways Agency (HA) publication 'Manual of contract documents for highway works: Volume 1: Specification for highway works', clause 601 as 'Unacceptable materials'.

#### **Frost susceptibility of fill materials**

General: Fill must not be frost-susceptible as defined in 'Specification for highway works', clause 801.

Test reports: If the following fill materials are proposed, submit a laboratory report confirming they are not frost-susceptible:

- Fine grained soil with a plasticity index less than 20%.
- Coarse grained soil or crushed granite with more than 10% retained on a 0.063 mm sieve.
- Crushed chalk.
- Crushed limestone fill with average saturation moisture content in excess of 3%.
- Burnt colliery shale.

Frost-susceptible fill: May only be used within the external walls of buildings below spaces that will be heated. Protect from frost during construction.

#### **Compacted fill for landscape areas**

Fill: Material capable of compaction by light earthmoving plant.

#### **Highways Agency Type 1 granular fill**

Fill: To 'Specification for highway works', clause 803:

- Crushed rock (other than argillaceous rock).
- Crushed concrete.
- Recycled aggregates.
- Crushed non-expansive slag.
- Well-burnt non-plastic colliery shale.

#### **Highways Agency Type 2 granular fill**

Fill: To 'Specification for highway works', clause 804:

- Crushed rock (other than argillaceous rock).
- Crushed concrete.
- Crushed non-expansive slag.
- Well-burnt non-plastic colliery shale.
- Natural gravel.
- Natural sand.

### **Hardcore fill**

Fill: Granular material, free from excessive dust, well graded, passing a 75 mm BS sieve, and complying with one of the following requirements:

- 10% (minimum) fines value of 50 kN when tested in a soaked condition to BS 812-111 (partly replaced but remains current).
- Impact value SZ of 24 when tested to BS EN 1097-2.

In each layer only one of the following groups:

- Crushed rock (other than argillaceous rock) or quarry waste with not more binding material than is required to help hold the stone together.
- Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
- Recycled aggregates.
- Crushed non-expansive slag.
- Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.
- Well-burnt non-plastic colliery shale.
- Natural gravel.
- Natural sand.

### **Venting hardcore layer**

Fill: Clean granular material, well graded, passing a 75 mm BS sieve but retained on a 20 mm BS sieve. In each layer only one of the following groups:

- Crushed hard rock.
- Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
- Recycled aggregates.
- Gravel.

### **Sand blinding**

Sand for blinding: To BS EN 12620, grade 0/4 or 0/2 (MP).

Alternative fine materials: Submit proposals.

## **EXECUTION**

### **Site clearance**

Timing: Before topsoil stripping, if any.

General: Clear site of rubbish, debris and vegetation. Do not compact topsoil.

### **Removing small trees, shrubs, hedges and roots**

Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group Safety guides.

### **Felling large trees**

Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group Safety Guides.

Felling: As close to the ground as possible.

Work near retained trees: Take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained, where tree canopies overlap and in confined spaces generally.

### **Stripping topsoil**

General: Before commencing general excavation or filling, strip topsoil from areas where there will be regrading, buildings, pavings/ roads and other areas shown on drawings.

Depth of topsoil difficult to determine: Give notice.

Around trees: Do not remove topsoil from below the spread of trees to be retained.

### **Handling topsoil**

Aggressive weeds:

- Give notice and obtain instructions before moving topsoil containing aggressive weeds included in the Weeds Act, section 2 or the Wildlife and Countryside Act, Schedule 9, part II.
- Minimize disturbance, trafficking and compaction.

Contamination: Do not mix topsoil with the following:

- Subsoil, stone, hardcore, rubbish or material from demolition work.
- Oil, fuel, cement or other substances harmful to plant growth.
- Other grades of topsoil.

Multiple handling: Keep to a minimum. Use topsoil immediately after stripping.

Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when topsoil is wetter than the plastic limit as defined by BS 3882, Annex N2.

### **Adjacent excavations**

Proximity: Where an excavation encroaches below a line drawn at an angle from the nearest formation level of another higher excavation, the lower excavation, all work within it and backfilling thereto must be completed before the higher excavation is made.

- Angle of line from horizontal: 45° for stable soils, 30° for wet clays.

### **Permissible deviations from formation levels**

Beneath mass concrete foundations: ±25 mm.

Beneath ground bearing slabs and reinforced concrete foundations: ±15 mm.

Embankments and cuttings: ±50 mm.

Ground abutting external walls: ±50 mm, but finished level must be at least 150 mm below dpc.

### **Inspecting formations**

Give notice: Make advance arrangements for inspection of formations.

Preparation: Just before inspection remove the last 150 mm of excavation. Trim to required profiles and levels, and remove loose material.

Formations: Seal with concrete within 4 hours of inspection.

### **Foundations**

Give notice if:

- A natural bearing formation of undisturbed subsoil is not obtained at the depth shown on the drawings; or
- The formation contains soft or hard spots or highly variable material.

### **Trench fill foundations**

Excavation: Form trench down to formation in one operation.

Safety: Prepare formation from ground level.

Inspection of formations: Give notice before excavating.

Shoring: Where inspection of formation is required, provide localised shoring to suit ground conditions.

Concrete fill: Place concrete immediately after inspection and no more than four hours after exposing the formation.

### **Foundations in made up ground**

Depth: Excavate down to a natural formation of undisturbed subsoil.

Discrepancy: Give notice if this is greater or lesser than depth given.

### **Unstable ground**

Generally: Keep excavation stable at all times.

Give notice: Without delay, if newly excavated faces are too unstable to allow earthwork support to be inserted.

If instability is likely to affect adjacent structures or roadways: Take appropriate emergency action.

### **Recorded features**

Recorded foundations, beds, drains, manholes, etc: Break out and seal drain ends.

Contaminated earth: Remove and disinfect as required by local authority.

### **Unrecorded features**

Give notice: If unrecorded foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches, etc. are encountered.

### **Existing watercourses**

Diverted watercourses which are to be filled: Before filling, remove vegetable growths and soft deposits.

### **Topsoil & subsoil**

Retained excavated material:

- Stockpile in separate temporary storage heaps.
- Spread and level surplus subsoil on site.
- Protected areas: Do not raise soil level within root spread of trees that are to be retained.

Remaining material: Remove from site.

### **Water**

Generally: Keep excavations free from water until:

- Formations are covered;
- Below ground constructions are completed; and
- Basement structures and retaining walls are able to resist leakage, water pressure and flotation.

Drainage: Form surfaces of excavations and fill to provide adequate falls.

Removal of water: Provide temporary drains, sumps and pumping as necessary. Do not pollute watercourses.

### **Ground water level/ Running water**

Give notice:

- If excavations are below water table.
- If springs or running water are encountered.

### **Pumping**

General: Do not disturb excavated faces or stability of adjacent ground or structures.

Pumped water: Discharge without flooding the site or adjoining property.

Sumps: Construct clear of excavations. Fill on completion.

### **Placing fill**

Excavations and areas to be filled: Free from loose soil, rubbish and standing water.

Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.

Adjacent structures, membranes and buried services:

- Do not overload, destabilize or damage.
- Submit proposals for temporary support necessary to ensure stability during filling.
- Allow 14 days (minimum) before backfilling against in situ concrete structures.

Layers: Place so that only one type of material occurs in each layer.

Earthmoving equipment: Vary route to avoid rutting.

### **Compaction**

General: Compact fill as soon as possible after placing.

After compaction: Surface of each layer must be well closed, showing no movement under compaction plant, and without cracks, holes, ridges, loose material and the like.

Defective areas: Remove and recompact to full thickness of layer using new material.

### **Geotextile sheeting**

Preparation: Before laying, remove humps and sharp projections. Fill hollows.

Protect from:

- Exposure to light, except for five hours (maximum) during laying.
- Contaminants.
- Materials listed as potentially deleterious by geotextile manufacturer.
- Damage until fully covered by fill.
- Wind uplift, by laying 15 m (maximum) before covering with fill.

### **Compacted filling for landscape areas**

Layer thickness: 200 mm (maximum).

Laying: Lightly compact each layer to produce a stable soil structure.

### **Highways Agency granular filling**

Filling: To 'Specification for highway works', clauses 801–804.

### **Compacted general filling**

Excavated material: Select suitable material and keep separate.

Filling: Spread and level material in layers. As soon as possible thoroughly compact each layer.

Proposals: Well in advance of starting work submit details of proposed:

- Materials to be used, including quantities of each type.
- Type of plant.
- Maximum depth of each compacted layer.
- Minimum number of passes per layer.

### **Backfilling around foundations**

Under oversite concrete and pavings: Spread and level in 150 mm (maximum) layers. Thoroughly compact each layer.

Under grassed or soil areas: Lay and compact in 300 mm (maximum) layers.

### **Hardcore filling**

Filling: Spread and level in 150 mm (maximum) layers. Compact each layer thoroughly.

### **Venting hardcore layer**

Filling: Spread and level in 150 mm (maximum) layers. Thoroughly compact each layer whilst maintaining enough voids to allow efficient venting.

### **Blinding**

Surfaces (other than venting hardcore layer) to receive sheet overlays or concrete, blind with:

- Sand or fine gravel applied to fill interstices. Moisten as necessary before final rolling to provide a flat, closed, smooth surface.
- Permissible deviations on surface level: +0 -25 mm.

# E10 IN SITU CONCRETE

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## PRODUCTS

### Concrete

Standard: To BS EN 206-1.

Complimentary British Standard:

- Method of specifying and guidance: To BS 8500-1.
- Specification: To BS 8500-2.

### Aggregates

Aggregates for concrete: To BS EN 12620.

Aggregates for exposed visual concrete:

- Limitations on contaminants: Free from absorbent particles which may cause 'popouts', and other particles such as coal and iron sulfide which may be unsightly or cause unacceptable staining.
- Colour: Consistent.
- Supply: From a single source and maintained throughout the contract.
- Samples: Submit on request.

Lightweight aggregates for concrete: To BS EN 13055-1.

### Underlay

Building paper: To BS 1521, Class B1F.

Polyethylene sheet: Minimum 250 µm.

## EXECUTION

### Ready mixed concrete

Production plant: Currently certified by a body accredited by UKAS to BS EN ISO/ IEC 17065 for product conformity certification of ready-mixed concrete.

Source: Obtain from one source if possible, otherwise submit proposals.

Delivery notes: Retain for inspection.

Declarations of nonconformity from concrete producer: Notify immediately.

Substitution of standardized prescribed concrete for designated concrete:

- Generally: Conform to BS 8500-2, clause 8.
- Substitution: In accordance with BS 8500-1, table A.13. Submit proposals for each substitution, stating reasons.

### Site mixed concrete

Application: Use where neither strength nor appearance is critical.

Water: Use mains water. Protect from contamination.

Batching by mass: Allow for water content of aggregates.

Site made standardized prescribed concrete mixes: Conform to BS 8000-2.1, sub sections 2, 3 and 4.

Admixtures:

- Calcium chloride and admixtures containing calcium chloride: Not permitted.

### Construction (daywork) joints

Locations: Where not shown on drawings, submit proposals.

Preparation: While concrete is still green, remove surface laitance and expose aggregate finish.

- Condition of surface immediately before placing fresh concrete: Clean and damp.

### Premature water loss

Requirement: Prevent water loss from concrete laid on absorbent substrates. Lay underlay. Lap edges 150 mm.

### Placing

Cleanliness of surfaces immediately before placing concrete: Clean with no debris, tying wire clippings, fastenings or free water.

Pours: Maintain records for time, date and location.

Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction.

Temperature limitations for concrete: 5–30°C.

Continuity of pours: Place in final position in one continuous operation up to construction joints.

Placing of concrete must not:

- cause uneven dispersal, segregation or loss of ingredients;
- adversely affect the formwork or formed finishes;
- be carried out against frozen or frost covered surfaces; or
- form cold joints.

Thickness: To suit method of compaction and achieve efficient amalgamation during compaction.



### **Compacting**

General: Fully compact concrete to full depth. Continue until air bubbles cease to appear on the top surface.

Consecutive batches of concrete: Amalgamate without damaging adjacent partly hardened concrete.

Methods of compaction: To suit consistence class and use of concrete.

### **Surface regularity**

Sudden irregularities: Not permitted.

Measurement: Use slip gauges to BS 8204-1 or -2.

### **Curing**

Requirement: Keep surface layers of concrete moist throughout curing period, including perimeters and abutments, by either restricting evaporation or continuously wetting surfaces of concrete.

Surfaces covered by formwork: Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.

Top surfaces: Cover immediately after placing and compacting.

- Removal of covering for finishing operations: Replace immediately thereafter.

Surface temperature: Maintain above 5°C for four days.

Records: Maintain details of location and timing of casting of individual batches, removal of formwork and removal of coverings. Keep on site, available for inspection.

Coverings for curing: Suitable impervious sheet materials.

- Curing compounds: Do not use without consent.

Interim covering to top surfaces of concrete: Until surfaces are in a suitable state to receive coverings in direct contact, cover with waterproof sheeting held clear of the surface and seal against draughts.

Curing periods (minimum):

- Surfaces which will be exposed in the finished work, and wearing surfaces of floors and pavements: 10 days.
- Other structural concrete surfaces: 5 days.

### **Protection**

Prevent damage to concrete, including:

- Surfaces generally: From rain, indentation and other physical damage.
- Surfaces to exposed visual concrete: From dirt, staining, rust marks and other disfiguration.
- Immature concrete: From thermal shock, physical shock, overloading, movement and vibration.
- In cold weather: From entrapment and freezing expansion of water in pockets, etc.

# F10 BRICK AND BLOCK WALLING

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.  
Mortars: Read with Z21.

## PRODUCTS

### New masonry units

Aggregate concrete bricks and blocks: To BS EN 771-3.  
Autoclaved aerated concrete (AAC) blocks: To BS EN 771-4.  
Calcium silicate bricks: To BS EN 771-2.  
Clay blocks: To BS EN 771-1.

- Type: LD.

Clay bricks: To BS EN 771-1.  
Gypsum blocks: To BS EN 12859.  
Manufactured stone blocks: To BS EN 771-5.  
Standard special shape bricks: To BS 4729.

### Second hand masonry units

Reclaimed facing bricks: Sound, free from mortar and deleterious matter.

## EXECUTION

### Workmanship generally

Standard: To BS 5628-3 (withdrawn but cited in Building Regulations).

### Conditioning clay and calcium silicate bricks

Bricks delivered warm from manufacturing process: Do not use until cold.  
Absorbent bricks in warm weather: Wet to reduce suction. Do not soak.

### Conditioning concrete bricks/ blocks

Autoclaved concrete bricks/ blocks delivered warm from manufacturing process: Do not use.  
Age of nonautoclaved concrete bricks/ blocks: Do not use until at least four weeks old.  
Avoidance of suction in concrete bricks/ blocks: Do not wet.

- Use of water retaining mortar admixture: Submit details.

### Laying generally

Mortar joints generally: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.  
Autoclaved aerated concrete (AAC) blocks laid with thin mortar adhesive joints: Fill vertical joints. Lay blocks on a full bed.  
Clay blocks with interlocking vertical joints: Dry vertical joints. Lay blocks on a full bed of thin layer mortar.  
Bond where not specified: Half lap stretcher.  
Vertical joints in facework: Even widths. Plumb at every fifth cross joint along course.

### Height of lifts

General: Rack back when raising quoins and other advance work.  
Walling using cement gauged or hydraulic lime mortar:

- Lift height: 1.2 m (maximum) above any other part of work at any time.
- Daily lift height: 1.5 m (maximum) for any one leaf.

Walling using thin joint mortar glue:

- Lift height: 1.3 m (maximum) above any other part of work at any time.

### Levelling of separate leaves using cement gauged or hydraulic lime mortar

Locations for equal levelling of cavity wall leaves: As follows:

- Every course containing vertical twist type ties or other rigid ties.
- Every third tie course for double triangle/ butterfly ties.
- Courses in which lintels are to be bedded.

### Coursing brickwork

Gauge for new work with bricks of 65 mm work height: Four brick courses including bed joints to 300 mm.  
Tying in to existing brickwork: Line up with existing brick courses.

### Laying frogged bricks

Single frogged bricks: Frog uppermost.  
Double frogged bricks: Larger frog uppermost.  
Frog cavity: Fill with mortar.

### Laying gypsum blocks with tongues and grooves

Orientation: Tongued length uppermost.

### Support of existing work

Joint above inserted lintel or masonry: Fully consolidated with semidry mortar to support existing structure.

### **Compacting**

General: Fully compact concrete to full depth. Continue until air bubbles cease to appear on the top surface.

Consecutive batches of concrete: Amalgamate without damaging adjacent partly hardened concrete.

Methods of compaction: To suit consistence class and use of concrete.

### **Surface regularity**

Sudden irregularities: Not permitted.

Measurement: Use slip gauges to BS 8204-1 or -2.

### **Curing**

Requirement: Keep surface layers of concrete moist throughout curing period, including perimeters and abutments, by either restricting evaporation or continuously wetting surfaces of concrete.

Surfaces covered by formwork: Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.

Top surfaces: Cover immediately after placing and compacting.

- Removal of covering for finishing operations: Replace immediately thereafter.

Surface temperature: Maintain above 5°C for four days.

Records: Maintain details of location and timing of casting of individual batches, removal of formwork and removal of coverings. Keep on site, available for inspection.

Coverings for curing: Suitable impervious sheet materials.

- Curing compounds: Do not use without consent.

Interim covering to top surfaces of concrete: Until surfaces are in a suitable state to receive coverings in direct contact, cover with waterproof sheeting held clear of the surface and seal against draughts.

Curing periods (minimum):

- Surfaces which will be exposed in the finished work, and wearing surfaces of floors and pavements: 10 days.

- Other structural concrete surfaces: 5 days.

### **Protection**

Prevent damage to concrete, including:

- Surfaces generally: From rain, indentation and other physical damage.
- Surfaces to exposed visual concrete: From dirt, staining, rust marks and other disfiguration.
- Immature concrete: From thermal shock, physical shock, overloading, movement and vibration.
- In cold weather: From entrapment and freezing expansion of water in pockets, etc.

### **Block bonding new walls to existing**

Pocket requirements: Formed as follows:

- Width: Full thickness of new wall.
- Depth: 100 mm (minimum).

Vertical spacing of pockets:

- Brick to brick: 4 courses high at 8 course centres.
- Block to block: Every other course.

Pocket joints: Fully filled with mortar.

### **Jointing**

Profile: Consistent in appearance.

Accessible joints not exposed to view: Struck flush as work proceeds.

### **Pointing**

Joint preparation: Remove debris. Dampen surface.

### **Fire stopping**

Avoidance of fire and smoke penetration: Tight fit between cavity barriers and masonry. Leave no gaps.

### **Adverse weather**

General: Do not use frozen materials or lay on frozen surfaces.

Air temperature requirements: Do not lay bricks/ blocks:

- In cement gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
- In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising.
- In thin joint/ layer mortar glue when outside the limits set by the mortar manufacturer.

Temperature of walling during curing: Above freezing until hardened.

Newly erected walling: Protect at all times from:

- Rain and snow.
- Drying out too rapidly in hot conditions and in drying winds.

### **Facework**

Colour consistency of masonry units:

- Methods to ensure that delivered units are consistent and of an even colour range within deliveries: Submit proposals.
- Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
- Finished work: Free from patches, horizontal stripes and racking back marks.

Appearance:

- Brick/ block selection: Do not use units with damaged faces or arrises.
- Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
- Quality control: Lay masonry units to match relevant reference panels.
- Setting out: To produce satisfactory junctions and joints with built-in elements and components.
- Coursing: Evenly spaced using gauge rods.
- Lifts: Complete in one operation.
- Methods of protecting facework: Submit proposals.

Ground level: Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.

Putlog scaffolding: Not permitted in facework.

Toothed bond: New and existing facework in the same plane: Bond together at every course to achieve continuity of bond and coursing.

Cleanliness:

- Facework: Keep clean.
- Mortar on facework: Allow to dry before removing.
- Removal of marks and stains: Rubbing not permitted.

# F30 ACCESSORIES AND SUNDRY ITEMS FOR BRICK BLOCK AND STONE WALLING

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## PRODUCTS

### Air bricks in external walling

Standard: To BS 493, Class 1.

### Cavity insulation

Glass or rock wool batts: To BS EN 13162 or Agrément certified.  
Expanded polystyrene (EPS) boards: To BS EN 13163 or Agrément certified.  
Extruded polystyrene (XPS) boards: To BS EN 13164 or Agrément certified.  
Polyisocyanurate (PIR) foam boards: To BS EN 13165 or Agrément certified.  
Polyurethane (PUR) foam boards: To BS EN 13165 or Agrément certified.  
Phenolic foam boards: To BS EN 13166 or Agrément certified.

### Concrete fill to base of cavity wall

Standard: To BS EN 206 and BS 8500-2.

### Coping units

Precast concrete, clayware, slate and natural stone: To BS 5642-2.

### Fireplace components

Standard: To BS 1251.

### Flexible damp proof courses and cavity trays

Bitumen based: To BS 6398.  
Polyethylene: To BS 6515.  
Pitch polymer, bitumen polymer, polypropylene, and ethylene polypropylene based: Agrément certified.

### Flue blocks

Clay/ Ceramic: To BS EN 1806.

### Flue linings

Clay/ Ceramic: To BS EN 1457-1 and -2.  
Concrete: To BS EN 1857.

### Gratings/ Ventilators in internal walling

Standard: To BS 493, Class 2.

### Lintels

Precast concrete, precast clay block and prefabricated steel: To BS EN 845-2.

### Meshwork joint reinforcement

Standard: To BS EN 845-3.

### Plain clay tiles

Standard: To BS EN 1304.

### Sills

Precast concrete, clayware, slate and natural stone: To BS 5642-1.

### Wall ties

Cavity ties: To BS 1243, DD 140-2 or BS EN 845-1.  
Slip ties and slot ties: To BS EN 845-1.

## EXECUTION

### Air bricks in external walling and gratings/ ventilators in internal walling

Placement: Built in with no gaps at joints.

### Cavities in masonry walling

Concrete fill to base of cavity wall:

- Extent: Maintain 75 mm between top of fill and external ground level and 225 mm (minimum) between top of fill and ground level dpc.
- Placement: Compact to eliminate voids.

Cleanliness: Cavity base and faces, ties, insulation and exposed dpcs free from mortar and debris.

### **Cavity trays**

Formed in-situ:

- Joint treatment: Use unjointed wherever possible, otherwise lap 100 mm (minimum) and seal to produce a free draining and watertight installation.
- Horizontal cavity trays: Support using cavity closer.
- Sloping cavity trays: Prevent sagging.
- Cleanliness: Free from debris and mortar droppings.

Preformed:

- Placement: To provide a free draining and watertight installation.
- Joint treatment: As manufacturer's recommendations.

Over openings and other cavity bridgings:

- Length: To extend 150 mm (minimum) beyond ends of lintels/ bridgings.

### **Cavity trays – gas resistant**

Formed in-situ:

- Joint treatment: Use unjointed wherever possible, otherwise lap 150 mm (minimum) and seal to form a gas and watertight installation.
- Joint with damp proof membrane: Overlap dpc/ cavity tray 150 mm (minimum).

### **Cavity wall insulation**

Full fill type:

- Placement: Continuous and free of mortar and debris.

Partial fill type:

- Placement: Secure against face of inner leaf.
- Residual cavity: Clear and unobstructed.
- Joints between boards, at closures and penetrations: No gaps and free from mortar and debris.

### **Dpcs – horizontal**

Placement: In continuous lengths on full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles.

Width: At least full width of leaf unless otherwise specified. Edges of dpc not covered with mortar or projecting into cavity.

Overlying construction: Immediately cover with full even bed of mortar to receive next masonry course.

Overall finished joint thickness: As close to normal as practicable.

Ground level dpcs:

- Joint with damp proof membrane: Continuous and effectively sealed.

Stepped dpcs in external walls:

- External walls on sloping ground: Install dpcs 150 mm (minimum) above adjoining finished ground level.

Sill dpcs: In one piece and turned up at back when sill is in contact with inner leaf.

Coping/ Capping dpcs:

- Bed in one operation to ensure maximum bond between masonry units, mortar and dpc.
- Dpcs crossing cavity: Provide rigid support to prevent sagging.

### **Dpcs – vertical**

Form: In one piece wherever possible.

Joints: Upper part overlapping lower 100 mm (minimum).

Jamb dpcs at openings:

- Joint with cavity tray/ lintel at head: Full underlap.
- Joint with sill/ horizontal dpc at base: Full overlap.
- Projection into cavity: 25 mm (minimum).
- Relationship with frame: In full contact.

Jamb dpcs to built in timber frames:

- Fixing: Securely fastened to back of frame.
- Fasteners: Galvanized clout nails or staples.

### **Flues – block system**

Block placement: Finish joints flush to ensure a smooth, unrestricted flueway.

- Starter, offset and transfer blocks: Use.
- Coursing: As adjacent masonry.
- Non-bonded blocks: Support.
- Joints between blocks: Seal.

Testing flue system:

- Core ball test and smoke test to BS EN 15287-1: On completion, carry out each test. If obstructions or leaks are revealed, submit proposals for making good.

### **Flues – clay/ ceramic lining system**

Linings placement: Fully bed with socket or rebate uppermost using correct starters, adaptors, bends etc.

- Joints: Flush to provide an unrestricted flueway with smooth interior surfaces.

Testing flue system:

- Core ball test and smoke test to BS EN 15287-1, NA 8: On completion, carry out each test. If obstructions or leaks are revealed, submit proposals for making good.

### **Frames**

Built in frames: Remove horns and provide support.

- Fixing cramps: Fully bed in mortar.

Frames in prepared openings:

- Formation of opening: Use accurate, rigid templates to required size.

### **Lintels**

Placement: Bed on mortar used for adjacent work.

- Bearing: 100 mm (minimum).

Precast concrete and precast clay block lintels: Use slate packing pieces.

### **Meshwork joint reinforcement**

Placement: Lay on an even bed of mortar in a continuous strip.

Laps:

- Joints: 225 mm (minimum).
- Angles: Full.

Keep edges back from face of work:

- External: 20 mm.
- Internal: 12 mm.

Joint finish: Normal thickness.

### **Movement joints with sealant**

Joint preparation and sealant application: As section Z22.

Filler:

- Thickness: To match design width of joint.
- Placement: Build in as work proceeds with no projections into cavities and to correct depth to receive sealant system.

### **Movement joints without sealant**

Filler to standard joints:

- Thickness: To match design width of joint.
- Placement: Build in as work proceeds filling the joint but without projecting into cavities.

Filler to fire resistant joints:

- Placement: Compress and insert into place in open joint.
- Adhesives and accessories: Types recommended by filler manufacturer.

### **Pinning up to soffits**

Top joint of loadbearing walls: Fill and consolidate with mortar.

### **Pointing in flashings**

Joint preparation: Free of debris and lightly wetted.

Pointing mortar: As for adjacent walling.

Placement: Fill joint and finish flush.

### **Precast concrete, clayware, slate and natural stone coping units**

Joints: Full and finished flush.

Placement: Lay on a full bed of mortar to line and level.

### **Precast concrete, clayware, slate and natural stone sills**

Joints: Flush.

Bedding one piece sills: Leave bed joints open except under end bearings and masonry mullions.

Pointing on completion: To match adjacent work.

### **Preformed dpc/ cavity tray junction cloaks/ stop ends**

Placement: To provide a free draining and watertight installation.

### **Site formed dpc/ cavity tray junctions/ stop ends**

- Three dimensional changes in shape: Form to provide a free draining and watertight installation. Seal laps.
- Alternative use of preformed junction cloaks/ stop ends: Submit proposals.



**Ties in masonry cavity walls**

Embedment in mortar beds: 50 mm (minimum).

Placement: Sloping slightly downwards towards outer leaf, without bending.

- Drip: Centred in the cavity and pointing downwards.

Provision of additional ties in cavity walls with full fill cavity insulation: One row to support lowest row of insulation batts. Additional ties at openings and movement joints: 300 mm (maximum) centres vertically within 225 mm of vertical movement joints and reveals of unbonded openings.

**Ties in masonry cladding to timber frames**

Embedment in mortar beds: 50 mm (minimum).

Placement: Slope downwards away from timber frame, without bending.

Additional ties at openings and movement joints: 300 mm (maximum) centres vertically within 225 mm of vertical movement joints and reveals of unbonded openings.

**Tile creasing**

Placement: Two courses, broken jointed.

- Mortar: As adjacent work, full bed.

Joints: Full and finished flush.

**Tile sills**

Placement: Two courses, broken jointed, true to line and level on full bed of mortar.

Joints: Full and finished flush.

**Tops of restrained nonloadbearing walls**

Restraints: Secure to soffit.

Filler placement: Full, no gaps.

**Ventilation ducts in external walling**

Placement: Across cavity, sloping away from inner leaf.

- Cavity seal: Full mortar joints.

Protection from water penetration to inner leaf: Where barrier is not integral to duct, form stepped dpc cavity tray with stop ends above duct, extending 150 mm on each side.

**Wall plates**

Placement: On full bed of mortar to correct horizontal level.

**Weep holes**

Locations: Through outer leaf immediately above base of cavity, at cavity trays, stepped dpcs and external openings.

- Position: 75 mm above top of cavity fill at base of cavity.

Provision: 1000 mm (maximum) centres and not less than two over each opening.

# J40 FLEXIBLE SHEET WATERPROOFING AND DAMP PROOFING

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## PRODUCTS

### Concrete

Standard: To BS 8500-2.

### Bitumen damp proof sheets

Standard: To BS 743.

### Polyester based bitumen damp proof membranes

Standard: To BS 8747.

### Polyethylene membranes

Standard: To Packaging and Industrial Films Association (PIFA) Standard 6/83A, or Agrément certified.

### Oxidized bitumen bonding compound

Standard: To BS EN 13304.

## EXECUTION

### General

Execution: In accordance with relevant parts of BS 8102 and CP 102.

Condition of substrate:

- Clean and even textured free from voids and sharp protrusions.
  - Moisture content: Compatible with damp proofing/ tanking.
- Air and surface temperature: Do not apply sheets if below minimum recommended by membrane manufacturer. Condition of membrane at completion:

- Neat, smooth and fully supported, dressed well into abutments and around intrusions.
- Completely impervious and continuous.
- Undamaged. Prevent puncturing during following work.

Permanent overlying construction: Cover membrane as soon as possible.

### Hardcore/ Venting hardcore beds

Finish: Smooth, consolidated, blinded bed free of sharp projections.

### Primers

Curing: Allow to dry thoroughly before covering.

### Hot applied bonding compounds

Application: Continuous even coating to provide full bonding over whole surface. Do not overheat.

### Loose laid membranes

Surfaces to be jointed: Clean and dry beyond full width of joint.

Covering to oversite damp proofing: Place immediately after laying membrane.

### Self-adhesive membranes

Bonding: Full. Smooth out to exclude air.

### Multilayer membranes

Subsequent layers: Apply as soon as possible.

### Angles in bonded sheeting

Preformed rot proof fillet to internal angles:

- Size (minimum): 50 x 50 mm, splay faced.
- Bedding: Bitumen mastic or bonding compound.

Reinforcing strip to all angles:

- Material: As damp proofing/ tanking.
- Width (minimum): 300 mm.
- Timing: Apply before main sheeting.

Proprietary reinforcing strip to all angles:

- Timing: Apply before main sheeting.

Dressing of main sheeting on to adjacent surfaces (minimum): 100 mm.

**Junctions with projecting dpcs/ cavity trays**

Adjoining surfaces: Clean and dry.

Dpcs/ Cavity trays: Lap and fully bond/ seal with sheeting.

- Laps (minimum): 100 mm. Gas retardant dpcs/ cavity trays: 150 mm.
- Bonding/ Sealing: Method compatible with component materials.

**Junctions with flush dpcs/ cavity trays**

Adjoining surfaces: Clean and dry.

Dpcs/ Cavity trays:

- Expose edge where concealed.
- Lap and fully bond/ seal sheeting to wall.
- Dressing of sheeting beyond dpc/ cavity tray (minimum): 50 mm.
- Bonding/ Sealing: Method compatible with component materials.

**Preformed collars for pipes, ducts, cables, etc**

Sealing: Fully bond to penetrations and sheeting.

Completed junctions: Impervious.

**Protection boards for damp proofing/ tanking**

Application

- Membrane surface: Clean and free from contaminants.
- Board contact with membrane: Secure and continuous.

Backfilling: Carry out when tanking, loading and protection are complete.

## **K32 PANEL CUBICLES LININGS AND SCREENS**

### **GENERAL**

#### **Cross-reference**

General: Read with A90 General technical requirements.

### **PRODUCTS**

#### **High pressure laminate (HPL)**

Laminate facings < 2 mm thick, single faced, bonded to substrate: To BS EN 438-3.  
Compact laminate > 2 mm thick, double faced: To BS EN 438-4.

#### **Particleboard, moisture resisting**

Standard: To BS EN 312, Type P5.

### **EXECUTION**

#### **Protection**

Doors and panels: Stack flat on bearers and separate by spacers where necessary to prevent damage to or from projections.

Completed cubicles: Keep clean and dry, and adequately protect from damage until completion.

#### **Installation**

Programming: Do not install cubicles or duct/ wall panels before building is weathertight, wet trades have finished their work, wall and floor finishes are complete, and the building is well dried out.

Accuracy: Set out to ensure frames and/ or panels and doors are plumb, level and accurately aligned.

Modifications: Do not cut, plane or sand prefinished components except where shown on drawings.

Fixing: Secure components using methods and fasteners recommended by the cubicle/ panel manufacturer. Prevent pulling away, bowing or other distortions to frames, panels and doors.

Moisture and thermal movement: Make adequate allowance for future movement.

## **L20 DOORS/ SHUTTERS/ HATCHES**

### **GENERAL**

#### **Cross-reference**

General: Read with A90 General technical requirements.

Purpose made joinery: Read with Z10.

Preservative/ fire retardant treatment: Read with Z12.

Fixings/ adhesives: Read with Z20.

Sealants: Read with Z22.

### **PRODUCTS**

#### **Door facings: laminate**

Standard: To BS EN 438-1 and -7.

Grade: Horizontal:

- Standard general purpose: HGS.
- Flame retardent general purpose: HGF.
- Post forming general purpose: HGP.

#### **Door facings: plywood**

Bonding quality: To BS EN 314.

Surface appearance:

- Hardwood: To BS EN 635-2.
  - Softwood: To BS EN 635-3.
- Conditions of use: To BS EN 636.

#### **External wood matchboarded doors**

Standard: Generally to BS 459.

#### **Fire performance**

Fire resistant doorsets and shutter assemblies:

- Type testing: To BS 476-22 or BS EN 1634-1.

Smoke control doorsets and shutter assemblies:

- Type testing: To BS 476-31.1 or BS EN 1634-3.

Intumescent seals:

- Type testing: To BS 476-23.

Testing authority: UKAS accredited.

#### **Metal door frames**

Steel frames: Generally to BS 1245.

#### **Metric internal and external wood doorsets, door leaves and frames**

Coordinated sizes: To BS 4787.

#### **Safety glazing to door leaves and sidelights**

Standard: To BS 6206 for safety plastics and BS EN 12600 for safety glass.

Location: To BS 6262-4.

#### **Single leaf external doorsets to dwellings**

Security: To BS 8220-1.

- General performance requirements: To British Standards Institute (BSI) publication, PAS 23-1.

- Enhanced security requirements: To BSI publication, PAS 24.

#### **Wood framed panel doors**

Timber quality: To BS EN 942.

#### **Wood preservative treatment**

Service life: Not less than 30 years.

External softwood doors and frames: Wood Protection Association (WPA) commodity specification C5.

External hardwood doors and frames: WPA commodity specification C10.

#### **Adhesives for wood doors and frames**

- Polyvinyl acetate (PVAC) to BS EN 204.
- Thermosetting resin to BS EN 12765, class C4.

## **EXECUTION**

### **Protection of components**

General: Do not deliver to site components that cannot be installed immediately or placed in clean, dry, floored and covered storage.

Stored components: Stacked on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.

### **Protection of timber surfaces inaccessible after installation**

Protective coating: Primed or sealed before fixing components.

### **Protection of metallic surfaces inaccessible after installation**

Relevant conditions: External or damp (high humidity) internal.

Copper alloys: Avoid direct contact with aluminium, iron, steel or zinc (including galvanizing).

Aluminium alloys: Avoid direct contact with:

- Timber treated with copper, zinc or mercury based preservatives.
- Unseasoned oak, sweet chestnut, Douglas fir, western red cedar.
- Iron and steel unless galvanized.
- Copper, copper alloys and rainwater run off from these materials.
- Concrete, mortars, plasters or soil, especially when embedded.
- Paints containing copper or mercury based fungicides, graphite or lead.

Protective coating as separating layer: Two coats of bitumen solution to BS 6949, an approved mastic impregnated tape or submit proposals.

- Timing: Before fixing components.
- Constraint: Only to surfaces not exposed on completion.

### **Building in**

General: Not permitted except where specifically stated.

Components specified for building in:

- Bracing and protection: Prevent distortion and damage of built-in frames during erection of adjacent structure.
- Damp proof courses associated with built in wood frames: Fixed to backs of frames using galvanized clout nails.

### **Fixing of wood frames**

Spacing of fixings (frames not predrilled): Maximum 150 mm from ends of each jamb and at 600 mm maximum centres.

### **Fire resisting and/ or smoke control doors/ doorsets**

Installation: In accordance with instructions supplied with the product conformity certificate, test report or engineering assessment.

Gaps between frames and supporting construction: Filled as necessary in accordance with requirements for certification and/ or door/ doorset manufacturer's instructions.

## L40 GENERAL GLAZING

### GENERAL

#### Cross-reference

General: Read with A90 General technical requirements.

### PRODUCTS

#### Glass

Standards: To BS 952 and relevant parts of:

- BS EN 572 for basic soda lime silicate glass.
- BS EN 1096 for coated glass.
- BS EN 1748-1-1 for borosilicate glass.
- BS EN 1748-2-1 for ceramic glass.
- BS EN 1863 for heat strengthened soda lime silicate glass.
- BS EN 12150 for thermally toughened soda lime silicate safety glass.
- BS EN 12337 for chemically strengthened soda lime silicate glass.
- BS EN 13024 for thermally toughened borosilicate safety glass.
- BS EN ISO 12543 for laminated glass and laminated safety glass.

Panes/ sheets: Clean and free from obvious scratches, bubbles, cracks, rippling, dimples and other defects.

- Edges: Generally undamaged. Shells and chips not more than 2 mm deep and extending not more than 5 mm across the surface are acceptable if ground out.

#### Heat soaking of thermally toughened glass

Heat soaking regime: Glass specified as 'heat soaked' to BS EN 14179-1 must be subjected to a heat soaking regime designed to reduce the incidence of failure due to nickel sulfide inclusions.

- Heat soaking period (minimum): Submit proposals.
- Mean glass temperature:  $290 \pm 10^\circ\text{C}$ .

Certified evidence of treatment: Submit.

#### Impact resistance

Plastics: To BS 6206.

Glass: To BS 6206 or BS EN 12600.

#### Fire resistance

Test standards: To BS 476-22 or BS EN 1364-1.

#### Mirrors

General: Silvered to give maximum reflection, free from distortion, tarnishing, discoloration, scratches and other defects visible in the designed viewing conditions.

### EXECUTION

#### Workmanship

Glazing generally: To BS 6262.

Integrity: Glazing must be wind and watertight under all conditions with full allowance made for deflections and other movements.

Dimensional tolerances: Panes/ sheets to be within  $\pm 2$  mm of specified dimensions.

Materials:

- Compatibility: Glass/ plastics, surround materials, sealers primers and paints/ clear finishes to be used together to be compatible. Avoid contact between glazing panes/ units and alkaline materials such as cement and lime.
- Protection: Keep materials dry until fixed. Protect insulating glass units and plastics glazing sheets from the sun and other heat sources.

Preparation:

- Surrounds, rebates, grooves and beads: Clean and prepare before installing glazing.

#### Removal of glazing for reuse

Existing glass/ plastics and glazing compound, beads, etc: Remove carefully, avoiding damage to frame, to leave clean, smooth rebates free from obstructions and debris.

Deterioration of frame/ surround: Submit report on defects revealed by removal of glazing.

- Affected areas: Do not reglaze until instructed.

Reusable materials: Clean glass/ plastics, beads and other components that are to be reused.



### **Bead fixing**

With pins:

- Pin spacing: Regular at maximum 150 mm centres, and within 50 mm of each corner.
- Exposed pin heads: Punched just below wood surface.

With screws:

- Screw spacing: Regular at maximum 225 mm centres, and within 75 mm of each corner.

### **Single glazing putty fronted**

Glazing installation:

- Glass: Located centrally in surround using setting and location blocks, and secured with glazing sprigs/ cleats/ clips at 300 mm centres.
- Finished thickness of back bedding after inserting glazing (minimum): 1.5 mm.
- Front putty: Finished to a smooth, neat triangular profile stopping 2 mm short of sight line. Surface lightly brushed to seal putty to glass and left smooth with no brush marks.

Sealing putty: Seal as soon as sufficiently hard but not within 7 days of glazing. Within 28 days apply either the full final finish, suitably protected until completion and cleaned down and made good as necessary, or two coats of primer/ sealer applied locally to the compound, to be followed nearer completion with the full specified finish.

Opening lights: Keep in closed position until putty has set sufficiently to prevent displacement of glazing when opened.

### **Single glazing bead fixed with glazing compound**

Glazing installation:

- Glass: Located centrally in surround using setting and location blocks and distance pieces.
- Finished thickness of back bedding after inserting glazing (minimum): 3 mm.
- Front bedding: Applied to fill voids.
- Beads: Bedded in glazing compound and fixed securely.
- Visible edge of glazing compound: Finished internally and externally with a smooth chamfer.

### **Single glazing bead fixed with tapes and capping sealant**

Glazing installation:

- Glass: Located centrally in surround using setting and location blocks.
- Glazing tape: Top edge approximately 6 mm short of sight line on external side of glazing, to allow for capping sealant. Corners butt jointed with no gaps.
- Thickness of glazing tape bed (minimum): 3 mm on both sides of glazing after compression.
- Beads: Bedded in sealant, pressed firmly into position to compress tape, and fixed securely.
- Excess tape on internal side: Carefully trimmed to a smooth chamfer.
- Capping sealant: Applied to fill void between bead and glazing and finished to a smooth chamfer.

### **Single glazing bead fixed with extruded gaskets**

Glazing installation:

- Glass: Located centrally in surround using setting and location blocks.
- Gaskets and beads: Installed as recommended by frame manufacturer.
- Gasket fit at corners: Tight, without gaps.

### **Insulating glazing units bead fixed with extruded gaskets**

Glazing installation:

- Insulating unit: Located centrally in surround using setting and location blocks.
- Gaskets and beads: Installed as recommended by frame manufacturer.
- Gasket fit at corners: Tight, without gaps.
- Drainage and ventilation holes: Unobstructed.

### **Insulating glazing units bead fixed with cellular adhesive sections**

Glazing installation:

- Insulating unit: Located centrally in surround using setting and location blocks.
- Glazing sections/ strips/ tapes: Applied to rebate upstands and beads in positions recommended by manufacture.
- Beads: Installed using sufficient pressure to compress inner and outer sections/ strips/ tapes and fixed securely.
- Drainage and ventilation holes: Unobstructed.

### **Insulating glazing units bead fixed with loadbearing tapes and sealant capping**

Glazing installation:

- Insulating unit: Located centrally in surround using setting and location blocks.
- Glazing sections/ strips/ tapes: Applied to rebate upstands and beads finishing approximately 5 mm short of sight line to allow for capping sealant.
- Beads: Installed using sufficient pressure to compress inner and outer sections/ strips/ tapes and fixed securely.
- Capping sealant: Applied to both sides of glazing unit and finish to a smooth chamfer.
- Drainage and ventilation holes: Unobstructed.

### **Insulating glazing units bead fixed with solid bedding**

Glazing installation:

- Insulating unit: Located centrally in surround using setting and location blocks and distance pieces.
- Inner sealant: Applied to full height of rebate.
- Outer sealant: Applied to fill edge clearance void and space between unit and beads up to sight line.
- Finished thickness of back and front bedding after inserting glazing (minimum): 3 mm.
- Beads: Bedded on outer sealant and fixed securely.
- Excess sealant: Trimmed to a smooth chamfer.

### **Single glazing into grooves with sealant capping**

Glazing installation:

- Glass: Located centrally in grooves using setting blocks and distance pieces of appropriate thickness.
- Backing strip: Expanded polyethylene, inserted at head and jambs, ensuring a tight fit and allowing a minimum distance of 6 mm between strip and sight line.
- Sill beads: Fixed securely with backing strip between bead and glazing.
- Capping sealant: Applied to fill recesses on both sides of glass and finished to a smooth chamfer.

### **Internal tape glazing**

Glazing installation: Beads bedded dry to rebate and glazing tape/ section and fixed securely. Tape trimmed flush with sight line on both sides.

### **Mirrors**

Installation: Fixed accurately and securely without overtightening fasteners, to provide a flat surface giving a distortion free reflection.

### **Window film**

Application: Carried out by a firm approved by the film manufacturer in accordance with manufacturer's recommendations.

- Evidence of applicator's competence and experience: Submit on request.
- Sample area: Complete as part of the finished work, in an approved location and obtain approval of appearance before proceeding.
- Ambient air temperature at time of application: Above 5 °C.

Installed film: Fully adhered to the glass with no peeling, and free from bubbles, wrinkles, cracks or tears.

- Further contact with applied films: Avoid until bonding adhesive has cured.
- Cleaning and maintenance instructions: Submit copies.

### **Manifestation**

Factory application: Acid etching or engraving to be carried out by the glass manufacturer or by a firm approved in accordance with manufacturer's recommendations.

Site application: Adhesive film or transfers to be applied by a firm approved by film manufacturer and in accordance with manufacturer's recommendations.

- Sample area: Complete as part of the finished work, in an approved location, and obtain approval of appearance before proceeding.
- Ambient air temperature at time of film/ transfer application: Above 5 °C.

Installed film: Fully adhered to the glass with no peeling, and free from bubbles, wrinkles, cracks or tears.

- Further contact with applied films: Avoid until bonding adhesive has cured.
- Cleaning and maintenance instructions: Submit.

## M20A PLASTERED COATINGS

### GENERAL

#### Cross-reference

General: Read with A90 general technical requirements.

### PRODUCTS

#### Component materials for cement gauged plaster mortars

Lime:sand, ready-mixed: Lime to BS EN 459-1, type CL 90. Sand to BS EN 13139, grading 0/2 or 0/4 (CP or MP) with category 2 fines

Sand: To BS EN 13139; grading 0/2 or 0/4 (CP or MP) with category 2 fines.

Lime: To BS EN 459-1; type CL 90S.

Air entraining (plasticizing) admixtures: To BS EN 934-2 and compatible with other mortar constituents.

Pigment for coloured mortars: To BS EN 12878.

Cement: Common Portland to BS EN 197-1; from CEM 1, slag CEM II/S, fly ash CEM II/V or W.

White cement: Portland to BS EN 197-1, CEM 1

Sulfate resisting cement: Portland to BS 4027.

Masonry cement: To BS EN 998-1.

#### Component materials for lime:sand plaster mortars

Nonhydraulic ready prepared lime putty: Slaked directly from CL 90 (high calcium) quicklime to BS EN 459-1.

Natural hydraulic lime (NHL): To BS EN 459-1.

Sand: To BS EN 13139; grading to approval.

#### Gypsum plasters

Lightweight gypsum plaster undercoats: To BS 8481.

Gypsum plaster: To BS 8481.

Board finish plaster: To BS 8481.

Finish plaster: To BS 8481.

#### Gypsum plasterboard backings

Plasterboard: To BS EN 520.

#### Beads, stops and lath

Galvanized steel: To BS EN 13658-1.

Stainless steel: To BS EN 10088-1, grade 1.4301 (304).

#### Isolating membranes

Building paper: To BS 1521.

### EXECUTION

#### Admixtures

Suitable admixtures:

- Other than air entraining (plasticizing) admixtures to BS EN 934-2: Submit proposals.

Prohibited admixtures: Calcium chloride and any admixture containing calcium chloride.

#### Mixing

Render mortars (site-made):

- Batching: By volume. Use clean and accurate gauge boxes or buckets.
- Mix proportions: Based on damp sand. Adjust for dry sand.
- Lime:sand: Mix thoroughly. Allow to stand, without drying out, for at least 16 hours before using.

Mixes: Of uniform consistence and free from lumps. Do not retemper or reconstitute mixes.

Contamination: Prevent intermixing with other materials.

#### Site preparation of lime putty for lime:sand plaster mortars

Type: Slaked directly from CL 90 quicklime to BS EN 459-1, using an excess of water.

- Maturation: In pits/ containers that allow excess water to drain away.

- Density of matured lime putty: 1.3-1.4 kg/litre.

Maturation period before use (minimum): 90 days.

Storage: Prevent drying out or wetting. Protect from frost.

#### Cold weather

General: Do not use frozen materials or apply coatings to frozen or frost bound backgrounds.

Internal work. Take all necessary precautions to enable internal coating work to proceed without damage when air temperature is below 3°C.

#### Hair reinforcement for lime:sand plaster mortars

Proportions (approximate): 5 kg hair to 1 m<sup>3</sup> of coarse stuff.

Condition: Clean, free from grease and other impurities. Well teased before adding to the mix.

Distribution: Evenly throughout with no balling into lumps.

- Storage period for haired mortar (maximum): Four weeks.

### **Suitability of substrates**

Soundness: Free from loose areas and significant cracks and gaps.

Cutting, chasing, making good, fixing of conduits and services outlets and the like: Completed.

Tolerances: Permitting specified flatness/ regularity of finished coatings.

Cleanliness: Free from dirt, dust, efflorescence and mould, and other contaminants incompatible with coatings.

### **Stipple key**

Mix proportions (cement:sand): 1:1.5-2.

Consistency: Thick slurry, well stirred.

Application: Brushed and stippled to form deep, close-textured key.

Curing: Controlled to achieve a firm bond to substrate.

### **Bonding agent**

General: Apply evenly to substrate to achieve effective bond of plaster coat. Protect adjacent joinery and other surfaces.

### **Removing defective existing plaster.**

Plaster for removal: Detached, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.

- Hollow areas: Submit proposals.

- Stained plaster: Submit proposals.

Removing defective plaster: Cut back to square, sound edge.

Faults in substrate (structural deficiencies, damp, etc.): Submit proposals.

Cracks:

- Fine hairline cracking/ crazing: Leave.

- Other cracks: Submit proposals.

Dust and loose material: Remove from exposed substrates and edges.

### **Existing damp affected plaster**

Plaster affected by rising damp: Remove to a height of 300 mm above highest point reached by the damp or 1 m above dpc, whichever is higher.

Perished and salt contaminated masonry:

- Mortar joints: Rake out.

- Masonry units: Submit proposals.

Faults in substrate (structural deficiencies, additional sources of damp, etc.): Submit proposals.

Drying out substrates: Established drying conditions. Leave walls to dry for as long as possible before plastering.

Dust and loose material: Remove from exposed substrates and edges.

### **Gypsum plasterboard backings**

Exposed surface and edge profiles: Suitable to receive specified plaster finish.

### **Fixing plasterboard backings to timber backgrounds**

Fixings, accessories and installation methods: As recommended by board manufacturer.

Fixing: At the following centres (maximum):

- Nails: 150 mm.

- Screws to partitions/ walls: 300 mm. Reduce to 200 mm at external angles.

- Screws to ceilings: 230 mm.

Position of nails/ screws from edges of boards (minimum):

- Bound edges: 10 mm

- Cut/ unbound edges 13mm.

Position of nails/ screws from edges of supports (minimum): 6 mm.

Nail/ screw heads: Set below surface. Do not break paper or gypsum core.

### **Fixing plasterboard backings to metal framing/ furrings**

Fixings, materials, accessories and installation methods: As recommended by board manufacturer.

### **Joints in plasterboard backings**

Ceilings:

- Bound edges: At right angles to supports and with ends staggered in adjacent rows.

- Two layer boarding: Stagger joints between layers.

Partitions/ Walls:

- Vertical joints: Centre on studs. Stagger joints on opposite sides of studs. Two layer boarding: Stagger joints between layers.

- Horizontal joints: Two layer boarding: Stagger joints between layers by at least 600 mm. Support edges of outer layer.

Joint widths (maximum): 3 mm.

### **Dampproof lathing**

Fixing and sealing accessories: As recommended by the dampproof lathing manufacturer.

Fixing: Secure and firm to provide a continuous, keyed backing for coatings.

Joints between lathing sheets and junctions with services, windows and other openings: Prevent penetration and bridging of cavity by coatings.

### **Beads and stops generally**

Location: External angles and stop ends, except where specified otherwise.

Corners: Neat mitres at return angles.

Fixing: Secure, using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.

Finishing: After coatings have been applied, remove surplus material while still wet, from surfaces of beads/ stops exposed to view.

### **Crack control at junctions between dissimilar solid substrates**

Locations: Where dissimilar solid substrate materials are in same plane and rigidly bonded or tied together but defined movement joints are not required.

Crack control materials:

- Isolating layer: Building paper.
- Metal lathing: Galvanized steel plain expanded metal with spacers.

Installation: Fix metal lathing over isolating layer. Stagger fixings along both edges of lathing.

Width of installation over single junctions:

- Isolating layer: 150 mm.
- Lathing: 300 mm.

Width of installation across face of dissimilar background material (column, beam, etc. with face width not greater than 450 mm):

- Isolating layer: 25 mm (minimum) beyond junctions with adjacent substrate.
- Lathing: 100 mm (minimum) beyond edges of isolating layer.

### **Fibrous plaster mouldings**

Noggings, bearers, etc. to support mouldings: Position accurately. Fix securely.

Installation: True to line and level.

- Framing, fixing points and joints: Reinforce.

Finishing: Smooth, to correct profile and with flush joints.

### **Plastering application generally**

Application of coatings: Firmly and in one continuous operation between angles and joints. Achieve good adhesion.

Appearance of finished surfaces: Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.

Accuracy: Finish to a true plane, to correct line and level, with angles and corners to a right angle unless specified otherwise, and with walls and reveals plumb and square.

Drying out: Prevent excessively rapid or localised drying out.

### **Flatness/ surface regularity**

Sudden irregularities: Not permitted.

Deviation of plaster surface: Measure from underside of a straight edge placed anywhere on surface.

- Permissible deviation (maximum) for plaster not less than 13 mm thick: 3 mm in any consecutive length of 1800 mm.

### **Dubbing out**

General: Correct substrate inaccuracies.

New smooth, dense concrete and similar surfaces: Dubbing out prohibited unless total plaster thickness is within range recommended by plaster manufacturer.

Thickness of any one coat (maximum): 10 mm.

Mix: As undercoat.

Application: Achieve firm bond. Allow each coat to set sufficiently before the next is applied. Cross scratch surface of each coat.

### **Undercoats generally**

General: Rule to an even surface. Cross scratch to provide a key for the next coat.

Undercoats on metal lathing: Work well into interstices to obtain maximum key.

Undercoats gauged with Portland cement: Do not apply next coat until drying shrinkage is substantially complete.

### **Smooth finish**

Appearance: A tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks. Avoid water brush, excessive trowelling and over polishing.

### **Wood float finish**

Appearance: An even overall texture. Finish with a dry wood float as soon as wet sheen has disappeared.

# M40 STONE, QUARRY AND CERAMIC TILING OR MOSAIC

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## PRODUCTS

### Tiles

Ceramic floor and wall tiles (including quarry tiles and ceramic mosaics): To BS EN 14411.

Natural stone calibrated modular tiles: To BS EN 12057.

Natural stone not calibrated modular tiles: To BS EN 12057.

Natural stone slabs: To BS EN 12058.

### Bedding adhesive

Standard: To BS EN 12004.

### Mortar bedding mix

Cement: Portland to BS EN 197-1, type CEM I/42.5.

Sand:

- For bedding to walls: To BS EN 13139, with grading designation 0/2 (CP or MP) category 2 fines.
- For bedding to floors: To BS EN 13139, with grading designation 0/4 (MP) category 1 fines and between 20%–66% passing a 0.5 sieve.

Ready mixed lime:sand (coarse stuff) for bedding to floors: To BS EN 998-2.

### Cement:sand grouting mix

Cement: Portland to BS EN 197-1, type CEM I/42.5.

Sand:

- Joint widths of 6 mm or more: To BS EN 13139, with grading designation 0/2 (FP or MP), category 2 fines.
- Joint widths of 3–6 mm: To BS 5385-5, table 1.

Mixing: Mix thoroughly. Use the minimum of clean water needed for workability.

### Sealants

Standard: To BS EN ISO 11600, type F.

### Crack control reinforcement

Standard: To BS 4483.

## EXECUTION

### Adverse weather

Temperatures below 5°C or damp conditions: Do not fix tiles.

Frozen materials: Do not use.

Frozen or frost bound substrates: Do not apply finishes.

Inclement weather, frost and premature drying out: Protect work.

### Suitability of backgrounds/ bases

Background/ base tolerances: To permit specified flatness/ regularity of finished surfaces given the permissible minimum and maximum thicknesses of bedding.

Background/ base drying times (minimum) before tiling:

- Concrete slabs, concrete walls and brick/ block walls: 6 weeks.
- Cement: sand screeds: 3 weeks.
- Rendering: 2 weeks.
- Gypsum plaster: 4 weeks.

### Falls in bases

General: Give notice if falls are inadequate.

### Existing backgrounds/ bases

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 substrates: Dry before tiling.

Loose or hollow portions: Cut out.

Plaster which is loose, soft, friable, badly cracked or affected by efflorescence: Remove. Cut back to straight horizontal and vertical edges.

- Making good: Use plaster or nonshrinking filler.

Defective areas of glazed brick: Cut out.

Loose or hollow sounding tiles: Remove.

Paint with unsatisfactory adhesion: Remove so as not to impair bedding adhesion.

### **New in situ concrete**

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

### **New plaster**

Plaster: Dry, solidly bedded, free from dust and friable matter.

Plaster primer: Apply if recommended by adhesive manufacturer.

### **Plasterboard**

Boards: Dry, securely fixed and rigid with no protruding fixings and face to receive decorative finish exposed.

### **Smoothing underlayment**

Condition: Allow to dry before tiling.

### **Intermediate substrate**

Joints: Close butt.

Penetrations: Seal.

Substrate surface: Secure, true and even.

### **Fixing**

Colour/ Shade: Unintended variations within tiles for use in each area/ room are not permitted.

Variiegated tiles: Mix thoroughly.

Adhesive: Compatible with background/ base. Prime if recommended by adhesive manufacturer.

Use of admixtures with cementitious adhesives: Only admixtures approved by adhesive manufacturer.

Cut tiles: Neat and accurate.

Fixing: Provide adhesion over entire background/ base and tile backs.

Final appearance:

- Before bedding material sets, adjust tiles and joints to give true, regular appearance when viewed under final lighting conditions.
- Width, plane and alignment of joints between mosaic sheets: To match joints between mosaic tiles.

Surplus bedding material: Clean from joints and face of tiles without disturbing tiles.

### **Setting out**

Joints: True to line, continuous and without steps.

- Walls: Horizontal, vertical and aligned round corners.
- Floors: If setting out is not indicated on drawings, parallel to the main axis of the space or specified features.
- Adjoining floors/ walls and adjoining floors/ skirtings: Align.

Cut tiles: Minimize number, maximize size and position unobtrusively.

Movement joints: If locations are not indicated, submit proposals.

### **Flatness and regularity of tiling/ mosaics**

Sudden irregularities: Not permitted.

- Deviation of surfaces: Measure from underside of a 2 m straightedge with 3 mm thick feet placed anywhere on the surface. The straightedge must not be obstructed by the tiles and no gap should be greater than 6 mm, i.e. a tolerance of plus or minus 3 mm.

### **Level of tiling across joints**

Deviation between tile surfaces either side of a joint (maximum):

- 1 mm for joints less than 6 mm wide.
- 2 mm for joints 6 mm or greater in width.

### **Bedding mortar**

Batching: Select from:

- Batch by weight.
- Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials. Use accurate gauge boxes. Allow for bulking of damp sand.

Mixing: Thoroughly to achieve uniform consistence. Use a suitable forced action mechanical mixer. Do not use a free fall type mixer.

Application: Within two hours of mixing at normal temperatures. Do not use after initial set. Do not retemper.

### **Crack control reinforcement**

Installation: Place centrally in depth of bed. Lap not less than 100 mm and securely tie together with steel wire.

Corners: Avoid a four layer build at corners.

### **Skirtings**

Coved tile skirtings: Bed solid to wall before laying floor tiles.

Sit-on tile skirtings: Bed solid to wall after laying floor tiles.

### **Semidry cement:sand bed (floors)**

Water content: A film of water must not form on surface of bed when fully compacted.

### **Movement joints**

General: Extend through tiles and bedding to base/ background.

Rigid joint sections: Set to exact finished level of floor.

Structural joints: Centre movement joint over joints in base/ background.



# M40 STONE, QUARRY AND CERAMIC TILING OR MOSAIC

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## PRODUCTS

### Tiles

Ceramic floor and wall tiles (including quarry tiles and ceramic mosaics): To BS EN 14411.

Natural stone calibrated modular tiles: To BS EN 12057.

Natural stone not calibrated modular tiles: To BS EN 12057.

Natural stone slabs: To BS EN 12058.

### Bedding adhesive

Standard: To BS EN 12004.

### Mortar bedding mix

Cement: Portland to BS EN 197-1, type CEM I/42.5.

Sand:

- For bedding to walls: To BS EN 13139, with grading designation 0/2 (CP or MP) category 2 fines.
- For bedding to floors: To BS EN 13139, with grading designation 0/4 (MP) category 1 fines and between 20%–66% passing a 0.5 sieve.

Ready mixed lime:sand (coarse stuff) for bedding to floors: To BS EN 998-2.

### Cement:sand grouting mix

Cement: Portland to BS EN 197-1, type CEM I/42.5.

Sand:

- Joint widths of 6 mm or more: To BS EN 13139, with grading designation 0/2 (FP or MP), category 2 fines.
- Joint widths of 3–6 mm: To BS 5385-5, table 1.

Mixing: Mix thoroughly. Use the minimum of clean water needed for workability.

### Sealants

Standard: To BS EN ISO 11600, type F.

### Crack control reinforcement

Standard: To BS 4483.

## EXECUTION

### Adverse weather

Temperatures below 5°C or damp conditions: Do not fix tiles.

Frozen materials: Do not use.

Frozen or frost bound substrates: Do not apply finishes.

Inclement weather, frost and premature drying out: Protect work.

### Suitability of backgrounds/ bases

Background/ base tolerances: To permit specified flatness/ regularity of finished surfaces given the permissible minimum and maximum thicknesses of bedding.

Background/ base drying times (minimum) before tiling:

- Concrete slabs, concrete walls and brick/ block walls: 6 weeks.
- Cement: sand screeds: 3 weeks.
- Rendering: 2 weeks.
- Gypsum plaster: 4 weeks.

### Falls in bases

General: Give notice if falls are inadequate.

### Existing backgrounds/ bases

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 substrates: Dry before tiling.

Loose or hollow portions: Cut out.

Plaster which is loose, soft, friable, badly cracked or affected by efflorescence: Remove. Cut back to straight horizontal and vertical edges.

- Making good: Use plaster or nonshrinking filler.

Defective areas of glazed brick: Cut out.

Loose or hollow sounding tiles: Remove.

Paint with unsatisfactory adhesion: Remove so as not to impair bedding adhesion.



## 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.

Polishing: When grout is hard, polish tiling with a dry cloth.

Coloured grout:

- Staining of tiles: Not permitted.
- Evaluating risk of staining: Apply grout to a few tiles in a small trial area. If discolouration occurs apply a protective sealer to tiles and repeat trial.

# M50 RUBBER, PLASTICS, CORK, LINO, AND CARPET TILING AND SHEETING

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## PRODUCTS

### PVC (vinyl) flooring

PVC (vinyl) homogenous and heterogeneous flooring: To BS EN 649.

PVC (vinyl) faced, felt backed sheet flooring: To BS EN 650.

PVC (vinyl) faced, PVC foam backed sheet flooring: To BS EN 651.

PVC (vinyl) particle based enhanced slip resistance flooring: To BS EN 13845.

Classification: To BS EN ISO 10874.

### Rubber flooring

Smooth rubber flooring: To BS EN 1817.

Relief rubber flooring: To BS EN 12199.

Classification: To BS EN ISO 10874.

### Linoleum flooring

Standard: To BS EN ISO 24011.

Classification: To BS EN ISO 10874.

### Piled carpet tile and sheet flooring

Classification: To BS EN 1307.

### Needed carpet tile and sheet flooring – Flat surface

Classification: To BS EN 1470.

### Needed pile carpet tile and sheet flooring – Pile surface

Classification: To BS EN 13297.

### Flexible underlays for textile floor coverings

Standard: To BS 5808 and BS EN 14499.

### Rigid sheet (fabricated) underlays

Hardboard: To BS EN 622-2.

Plywood: To an approved national standard.

- Bonding quality: To BS EN 314-2.
  - Appearance class: To BS EN 635.
- Medium density fibreboard (MDF): To BS EN 622-5.

## EXECUTION

### Roll materials

Setting out of seams: Before ordering roll materials, submit proposals.

### Conditioning

General: Condition materials as necessary to ensure that floor covering will not shrink, expand, curl or otherwise distort after laying.

Method: Submit proposals for storing and unpacking materials, conditioning time and storage temperature.

### Commencement

Condition of works prior to laying materials:

- Building: Weathertight and well dried out.
- Wet trades: Finished.
- Paintwork: Finished and dry.
- Conflicting overhead work: Complete.
- Floor service outlets, duct covers and other fixtures around which materials are to be cut: Fixed.

Notification: Submit not less than 48 hours before commencing laying.

### 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.

### Floors with underfloor heating

Commencement of laying: 48 hours (minimum) after heating has been turned off.

Post laying start up of heating system: Slowly return heating to its operative temperature.

- Timing: 48 hours (minimum) after completing laying.

### **New bases**

Condition after preparation: Rigid, dry, sound, smooth and free from grease, dirt and other contaminants.

Suitability of bases and conditions within any area: Commencement of laying of coverings indicates acceptance of suitability.

### **Moisture content testing of new wet laid substrates:**

Timing: Four days (minimum) after drying aids have been switched off.

Moisture content test: In accordance with BS 5325, Annex A or BS 8203, Annex A.

- Locations for readings: In all corners, along edges, and at various points over area being tested.

Commencement of laying coverings: After all readings show 75% (maximum) relative humidity.

### **Existing bases**

Notification: Before commencing work, confirm that existing bases will, after preparation, be suitable to receive coverings.

Bases from which existing floor coverings have been removed: Clear of covering and as much adhesive as possible.

- Preparation: Skim with smoothing underlayment compound to give a smooth, even surface.

Existing floor coverings to be overlaid:

- Preparation: Make good by local resticking and patching or filling with smoothing underlayment compound to give a smooth, even surface.

Wood block flooring: Clean and free from wax with all blocks sound and securely bonded.

- Preparation: Fill hollows with smoothing compound to give a smooth, even surface.

- Missing and loose blocks: Replace and reset in adhesive to match existing. Sand or plane to make level.

Timber boarding/ strip flooring: Boards securely fixed and acceptably level.

- Protruding fasteners: Not permitted.

- Preparation: Plane, sand or apply smoothing compound to give a smooth, even surface.

Particleboard flooring: Boards securely fixed, level and free from surface sealers and contaminants.

- Gaps between boards: 1 mm (maximum).

### **Fabricated hardboard underlay**

Existing floor boards: Securely fixed and level with no gross irregularities or protruding fasteners.

Conditioning of sheets: Prior to fixing.

- Requirement: To restrict in situ expansion and prevent consequential disfigurement to floor coverings.

- Timing: Allowed to dry before covering.

Joints: Not coincident with joints in substrate. Cross joints staggered.

- Joints in underlay for rubber, plastics, cork, linoleum flooring: Butted.

- Joints in underlay for carpet sheet and tiles: 1–2 mm wide.

Fasteners: Set flush with surface.

- General fixing: At 150 mm grid centres over area of each sheet.

- Perimeter fixing: At 100 mm centres, set in 12 mm from edge.

### **Fabricated plywood underlay**

Existing floor boards: Securely fixed and level with no gross irregularities or protruding fasteners.

Joints: Not coincident with joints in substrate. Cross joints staggered.

- Joint width: 0.5–1 mm.

Fasteners: Set flush with surface.

- General fixing: At 150 mm grid centres over area of each sheet.

- Perimeter fixing: At 100 mm centres, set in 12 mm from edge.

### **Medium density fibreboard underlay**

Existing floor boards: Securely fixed and level with no gross irregularities or protruding fasteners.

Joints: Not coincident with joints in substrate. Cross joints staggered.

- Joints in underlay for rubber, plastics, cork, linoleum flooring: Butted.

- Joints in underlay for carpet sheet and tiles: 1–2 mm wide.

Fasteners: Set flush with surface.

- General fixing: At 150 mm grid centres over area of each sheet.

- Perimeter fixing: At 100 mm centres, set in 12 mm from edge.

### **Setting out tiles**

Method: Set out from centre of area.

- Tiles along opposite edges: Of equal size.

- Edge tiles: Greater than 50% of full tile width where possible.

- Edges at thresholds: Centred on door leaf.

### **Adhesive fixing**

Application: As necessary to achieve good bond.

Finished surface irregularities: Not permitted.

**Edgings and cover strips**

Fixing: Secure using matching fasteners where exposed to view.

- Edge of covering: Fully gripped.

**Stair nosings and trims**

Fixing: Secure, level and with mitred joints.

- Packing: Continuous hardboard or plywood. Adjust to suit thickness of covering.
- Bedding: Gap-filling adhesive recommended by nosing manufacturer.

**Skirtings**

Fixing: Secure with top edge straight and parallel with floor.

Corners: Mitred joints.

**Trafficking after laying**

Traffic free period: Until adhesive is set.

**COMPLETION****Finishing linoleum, plastics, cork linoleum, and PVC surfaced cork flooring**

Cleaning solution: Water with neutral detergent.

- Heavily soiled areas: Lightly scrub.

Rinsing: Clean water.

Surplus rinse water: Remove.

**Finishing rubber flooring**

Cleaning solution: Recommended by flooring manufacturer.

Residue: Remove.

Rinsing: Clean water.

Surplus rinse water: Remove.

**Finishing untreated and resin reinforced cork tile flooring**

Preparation: Lightly sand joints to remove lipping.

- Finish: Match original.

Cleaning solution: Water with neutral detergent.

Rinsing: Clean water.

Surplus rinse water: Remove.

**Finished coverings**

Joints: Tight, smooth and accurately fitted.

Bonding: Secure.

Air bubbles, rippling, adhesive marks and stains: Not permitted.

**Spares**

Spare covering material: Hand over selected pieces to Employer.

# M60 PAINTING AND CLEAR FINISHING

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## PRODUCTS

### Coating materials

Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.

Knotting: To BS 1336.

Primers:

- Aluminium primer for woodwork: To BS 4756.
  - Calcium plumbate: To BS 3698.
  - Metallic zinc rich primer: To BS 4652.
  - Water/ Organic solvent based primers for wood: To BS 7956.
  - Cold applied bitumen based coatings (excluding use in contact with potable water): To BS 6949.
- Paint manufacturer selected by contractor: Submit names before commencement of any coating work.

### Other materials

Biocides: Types listed as surface biocides in current Health and Safety Executive (HSE) online publications covering non-agricultural approved pesticides.

## EXECUTION

### 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: Give notice. Store separately and allocate to distinct parts or areas of the work.

### Protection

'Wet paint' signs and barriers: Provide where necessary to protect other operatives and general public, and to prevent damage to freshly applied coatings.

### Preparation generally

Standard: To BS 6150.

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.

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.
- Junctions of walls and ceilings with architraves, skirtings and other trims: Fill with water based acrylic filler.
- Doors, opening windows and other moving parts:

- Ease, if necessary, before coating.
- Prime resulting bare areas.

Fixtures and fittings: Before commencing work: Remove from surfaces to be coated.

Existing ironmongery: Refurbishment: Remove old coating marks. Clean and polish.

- Hinges: Do not remove.
  - Replacement: Refurbish as necessary; refit when coating is dry.
- 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.

Wall coverings:

- Retained wallcoverings: Check that they are in good condition and well adhered to substrate.
- Previously covered walls: Wash down to remove paper residues, adhesive and size.

### **Previously coated surfaces generally**

Preparation: To BS 6150, 11.5.

Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.

Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.

Alkali affected coatings: Completely remove.

Contaminated surfaces: Give notice of:

- Coatings suspected of containing lead.
- Substrates suspected of containing asbestos.
- Significant rot, corrosion or other degradation of substrates.

Retained coatings: Thoroughly clean to remove dirt, grease and contaminants. Abrade gloss coated surfaces to provide a key.

Partly removed coatings: Apply additional preparatory coats to restore original coating thicknesses. Abrade junctions to give a flush surface.

Completely stripped surfaces: Prepare as for uncoated surfaces.

### **Previously coated surfaces**

Burning off:

- Risk assessment and action plan: Prepare, and obtain approval before commencing work.
- Adjacent areas: Protect from excessive heat and falling scrapings.
- Exposed resinous areas and knots: Apply two coats of knotting.
- Removed coatings: Dispose of safely.

Galvanized, sherardized and electroplated steel:

- White rust: remove.

Pretreatment: Apply one of the following: 'T wash'/ mordant solution to blacken whole surface; or, etching primer recommended by coating system manufacturer.

Steel:

- Defective paintwork: Remove to leave a firm edge and clean bright metal.
- Sound paintwork: Abrade to provide key for subsequent coats.
- Corrosion and loose scale: Abrade back to bare metal.
- Residual rust: Treat with a proprietary removal solution.
- Bare metal: Apply primer as soon as possible.
- Remaining areas: Degrease.

Preprimed steel:

- Areas of defective primer, corrosion and loose scale: Abrade back to bare metal. Reprime as soon as possible.

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.

Preprimed wood:

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

### **Uncoated surfaces**

Aluminium, copper and lead:

- Surface corrosion: Remove and lightly abrade surface.
- Pretreatment: Etching primer if recommended by coating system manufacturer.

Concrete:

- Release agents: Remove. Repair major surface defects.

Masonry and render:

- Surface contaminants, loose and flaking material: Remove.

Plaster:

- Nibs, trowel marks and plaster splashes: Scrape off.
- Overtrowelled 'polished' areas: Abrade lightly.

Plasterboard:

- Depressions around fixings: Fill with stoppers/ fillers.

Plasterboard to receive textured coating:

- Joints: Fill, tape and feather out with materials recommended by textured coating manufacturer.

PVC-U:

- Dirt and grease: Remove. Do not abrade surface.

Steel - manual cleaning:

- Oil and grease: Remove.
- Corrosion, loose scale, welding slag and spatter: Abrade to remove.
- Residual rust: Treat with a proprietary removal solution.
- Primer: Apply as soon as possible.

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.

### **Existing frames**

Previously painted window frames:

- Paint encroaching beyond glass sight line: Remove.

- Putty:

Loose and defective putty: Remove.

Putty cavities and junctions between previously painted surfaces and glass: Clean thoroughly.

Finishing: Patch prime, reputty as necessary and allow to harden. Seal and coat as soon as sufficiently hard.

External sealant pointing:

- Defective sealant pointing: Remove.
- Joint depth: Approximately half joint width; adjust with backing strip if necessary.

### **Existing gutters**

Dirt and debris: Remove from inside of gutters.

Defective joints: Clean and seal with suitable jointing material.

### **Coating generally**

Application standard: To BS 6150, Clause 9.

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. Apply 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.

### **Coating of concealed surfaces**

Workshop coating of joinery: Apply coatings to all surfaces of components.

Site coating of joinery: After priming/ sealing, apply additional coatings to surfaces that will be concealed when component is fixed in place.

Site coating of metal surfaces: Apply additional coatings to surfaces that will be concealed when component is fixed in place.

Bottom edges of external doors: Prime/ seal and coat before hanging doors.

### **Coating of wood**

End grain: Before assembly, seal with primer or sealer, as appropriate. Allow to dry.

Staining:

- Sealer: Apply if recommended by stain manufacturer.
- Application: In flowing coats and brush out excess stain to produce uniform appearance.

Varnishing:

- First coat: For solvent based varnishes, thin with white spirit. Brush well in and lay off, avoiding aeration.
- Subsequent coats: Rub down lightly along the grain between coats.

### **Coating for glazing elements**

Bead glazed coated wood: Before glazing, apply first two coats to rebates and beads.

Setting glazing compounds:

- Sealer: Apply two coats to rebates.
- Setting: Allow compound to set for seven days.
- Sealing: Within a further 14 days, seal with a primer as recommended by the glazing compound manufacturer. Fully protect glazing compound with coating system as soon as it is sufficiently hard. Extend finishing coats on to glass up to sight line.



# N13 SANITARY APPLIANCES AND FITTINGS

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## PRODUCTS

### Baths

Acrylic baths: To BS EN 198.

Pressed steel baths: To BS 1390.

Enamelled cast iron baths: To BS 1189.

### Bidets

Pedestal bidets: To BS EN 35 and BS 5505-3.

Wall hung bidets: To BS EN 36 and BS 5505-3.

### Disabled user WC package

Type approval certificate: Submit.

### Jointing and bedding compounds

Types: Recommended by manufacturers of appliances/ accessories/ pipes being jointed or bedded.

### Sealant for pointing

To BS EN ISO 11600.

### Shower units

Shower units: To BS EN 251.

- Glazed screens: Either safety glass, Class 3 to BS EN 12600, or safety plastics, Class C to BS 6206.

Shower hoses: To BS EN 1113.

### Sinks

Fireclay sinks: To BS 1206.

Kitchen sinks: To BS EN 13310.

### Urinals and cisterns

Rimless vitreous china bowl urinals: To BS 5520.

Automatic flushing urinal cisterns: To BS 1876.

### Wash basins

Fireclay and vitreous china: To BS 1188.

Wash basins: To BS 5506-3.

Connecting dimensions for basins:

- Wash basins: To BS EN 31.

### Wastes and traps

To BS EN 274-1, -2 and -3.

### WCs and cisterns

General: To DEFRA WC suite performance specification or approved by relevant water company.

Pan: To BS EN 997 for close coupled pans and BS EN 33 and BS EN 997 for pans with independent water supply.

Seat and cover (where not specified otherwise): To BS 1254.

Pan connector: To BS 5627.

Cisterns (replacement only): To BS 1125 or BS 7357.

## EXECUTION

### Installation generally

Standards: To BS 6465-1, -2 and -3.

Assembly and fixing: Surfaces designed to fall to drain as intended.

Fasteners: Nonferrous or stainless steel.

Supply and discharge pipework: Fix before appliances.

Appliances:

- Fix securely to structure. Do not support on pipework.

- Do not use or stand on appliances.

Noggings, bearers, etc. to support sanitary appliances and fittings: Position accurately. Fix securely.

Jointing and bedding compounds: Recommended by manufacturers of appliances, accessories and pipes being jointed or bedded.

On completion: Components and accessories working correctly with no leaks.

Labels and stickers: Remove.

### **Installing cisterns**

Cistern operating components: Obtain from cistern manufacturer.

- Float operated valve: Matched to pressure of water supply.

Overflow pipe: Fix to falls and locate to give visible warning of discharge.

- Location: Agreed, where not shown on drawings

### **Installing taps**

Fixing: Securely against twisting.

Seal with appliance: Watertight.

Positioning: Hot tap to left of cold tap as viewed by user of appliance.

### **Installing wastes and overflows**

Bedding: Waterproof jointing compound.

Fixing: With resilient washer between appliance and backnut.

### **Installing WC pans**

Floor mounted pans: Screw fix and fit cover caps over screw heads. Do not use mortar or other beddings.

Seat and cover: Stable when raised.

### **Tiled backgrounds other than splashbacks**

Timing: Complete before fixing appliances.

Fixing appliances: Do not overstress tiles.

## **N15 SIGNS AND NOTICES**

### **GENERAL**

#### **Cross-reference**

General: Read with A90 General technical requirements.  
Fasteners/ Adhesives: As section Z20.

### **PRODUCTS**

#### **Safety signs**

Safety signs generally: To BS ISO 3864-1.  
Photoluminescent safety signs: To Photoluminescent Safety Products Association Standard 002 Part 1.

#### **Public information signs**

Graphic symbols: To BS 8501.

#### **Tactile signs for the visually impaired**

Corners of rectangular rigid signs: Radiused.  
Surface: Nonreflective with maximum gloss factor of 15% when tested to BS 2782-5 or BS EN ISO 2813.  
Characters: Embossed between 1 and 1.5 mm with a stroke width that allows both sides of the character to be felt with the fingers at a single pass.  
Braille: English Standard located 6 mm below bottom of text with braille locator at left edge of sign.

#### **Metal posts for signs**

Hot rolled steel: To BS EN 10210-2.

### **EXECUTION**

#### **Fixing signs generally**

Fixing signs: Secure, plumb and level, using fixing methods recommended by manufacturer.  
Strength of fasteners: Sufficient to support all live and dead loads.  
Fasteners for external signs: Corrosion resistant material or with a corrosion resistant finish. Isolate dissimilar metals to avoid electrolytic corrosion.  
Fixings showing on surface of sign: Must not detract from the message being displayed.

#### **Concrete foundations for sign posts**

Mix: To BS EN 206-1 and BS 8500-2, Designated concrete not weaker than GEN 1 or Standardized prescribed concrete not less than ST2.  
Alternative mix for small quantities: 50 kg Portland cement, class 42.5, to 100 kg fine aggregate to 180 kg 20 mm nominal maximum size coarse aggregate, medium workability.  
Admixtures: Submit proposals.

- Prohibited content: Calcium chloride.

Blinding to post holes: 50 mm concrete.  
Installation of posts: Plumb and central in holes.  
Concrete fill: Fully compacted with concrete to not less than 150 mm below ground level.  
Duration of support to posts after placing concrete: Not less than three days.  
Backfilling: Not less than 48 hours after placing concrete.

# P21 DOOR AND WINDOW IRONMONGERY

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## PRODUCTS

### Ironmongery selected by contractor

Source: Single co-ordinated range. Submit details of selected range, manufacturer and/ or supplier.

### Samples

Timing: Before placing orders with suppliers obtain list of required samples from Contract Administrator.

Submission: Submit labelled examples of required samples.

Conformity: Retain samples on site for the duration of the contract. Ensure conformity of ironmongery as delivered with labelled samples.

### Ironmongery for fire doors

Relevant products: Ironmongery fixed to, or morticed into, the component parts of a fire resisting door assembly.

Compliance: Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.

- Certification: Submit evidence of successful testing by CERTIFIRE or other UKAS accredited laboratory.
- Melting point of components (except decorative non functional parts): 800°C (minimum).

### Door bolts

Standard: To BS EN 12051.

### Door closing devices (controlled)

Overhead closers and floor springs: To BS EN 1154.

- Door closing devices to fire/ smoke control doors: CE marked.

### Door coordinators

Standard: To BS EN 1158.

- Door co-ordinators to fire/ smoke control doors: CE marked.

### Door hinges

Single axis door hinges: To BS EN 1935.

- Hinges to doors on escape routes and fire/ smoke control doors: CE marked.

### Door latches

General: To BS EN 12209.

### Door lever handles and knobsets

Standard: To BS EN 1906.

### Door locks

General: To BS EN 12209.

Thief resistant: To BS 3621, Kitemark certified.

### Door track and running gear

Standard: To BS EN 1527.

### Electromagnetic hold open devices

Standard: To BS 5839 or to BS EN 1155.

### Electromagnetic hold open/ swing-free devices

Standard: To BS EN 1155.

- Electromagnetic devices to fire/ smoke control doors: CE marked.

### Emergency/ Panic exit devices

Emergency exit devices: To BS EN 179.

Panic exit devices: To BS EN 1125.

- Emergency/ Panic exit devices for locked doors on escape routes: CE marked.

### Letter plates

Standard: To BS EN 13724.

### Padlocks

Standard: To BS EN 12320.

### Pull handles

Standard: To BS 8424.

### Window hinges

Single axis hinges to access windows (window doors): To BS EN 1935.

## **EXECUTION**

### **Overhead door closers**

Operational adjustment:

- Variable power: Matched to size, weight and location of doors.
- Latched doors: Override latches and/ or door seals when fitted.
- Unlatched doors: Hold shut under normal working conditions.
- Closing against smoke seals of fire doors: Positive. No gaps.

### **Floor springs**

Operational adjustment:

- Variable power: Matched to size, weight and location of doors.
- Latched doors: Override latches and/ or door seals when fitted.
- Unlatched doors: Hold shut under normal working conditions.

Closing against smoke seals of fire doors: Positive. No gaps.

### **Electromagnetic hold open/ swing-free devices**

Means of release: Alarm system and/ or failure of power supply.

Test switch: Located in a convenient position adjacent to door.

Operational adjustment for devices with integral closer:

- Variable power: Matched to size, weight and location of doors.
- Latched doors: Override latches and/ or door seals when fitted.
- Unlatched doors: Hold shut under normal working conditions.

### **Door coordinators**

Application: To all single swing double doors with rebated meeting stiles and fitted with self closers.

### **Uncontrolled door closers**

Operation:

- Power: To suit the size and weight of doors to which they are fitted.
- Unlatched doors: Hold closed under normal conditions.

# P31 HOLES, CHASES, COVERS AND SUPPORTS FOR SERVICES

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## EXECUTION

### Ducts, chases and holes generally

General: Wherever possible, form during construction rather than by cutting.

### Holes and chases in concrete

Holes larger than 10 mm diameter and chases: Cast in.  
Holes smaller than 10 mm diameter: Drilling is permitted.

### Holes in structural steelwork

General: Cutting and drilling are not permitted.

### Holes, recesses and chases in masonry

Locations: Select to maintain integrity of strength, stability and sound resistance of construction.  
Sizes: Minimum needed to accommodate services.

- Holes: (maximum) 300 mm<sup>2</sup>.
- Walls of hollow or cellular block: Do not chase.
- Walls of other materials:
  - Vertical chases: No deeper than one third of single leaf thickness, excluding finishes.
  - Horizontal or raking chases: No longer than 1 m. No deeper than one sixth of the single leaf thickness, excluding finishes.

Chases and recesses: Do not set back to back. Offset by a clear distance at least equal to the wall thickness.  
Cutting: Do not cut until mortar is fully set. Cut carefully and neatly. Do not spall, crack or otherwise damage surrounding structure.

### Notches and holes in structural timber

General: Avoid if possible.

Sizes: Minimum needed to accommodate services.

Position: Do not locate near knots or other defects.

Notches and holes in the same joist: 100 mm apart horizontally (minimum).

Notches in joists:

- Position: Locate at top. Form by sawing down to a drilled hole.
- Depth (maximum): 0.15 x joist depth.
- Distance from supports: Between 0.1 and 0.2 x span.

Holes in joists: Locate on neutral axis.

- Position: Locate on neutral axis.
- Diameter (maximum): 0.25 x joist depth.
- Centres (minimum): 3 x diameter of largest hole.
- Distance from supports: Between 0.25 and 0.4 of span.

Notches in roof rafters, struts and columns: Not permitted.

Holes in struts and columns: Locate on neutral axis.

- Diameter (maximum): 0.25 x minimum width of member.
- Centres (minimum): 3 x diameter of largest hole.
- Distance from ends: Between 0.25 and 0.4 of span.

### Floor ducting and trunking

Fixing: Pack ducting and trunking level and true before screeding.

### Pipe sleeves

Sleeves: Extend through full thickness of wall or floor. Position accurately.

- Generally: Clearance around service pipe: 20 mm (maximum) or diameter of service, whichever is the lesser.
- Installation: Bed solid.

Exposed to view: Finish bedding and sealing neatly.

### Access covers/ gratings and frames

Vertical positioning of frames: Level, or marry in with levels of surrounding surfaces.

Permissible deviation in level of external covers and frames: +0 to -6 mm.

## COMPLETION

### Meter cabinets

Keys: At completion, hand over to Employer.

# R11 ABOVE GROUND FOUL DRAINAGE SYSTEMS

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

### Completion of design

Standards: To BS EN 12056-1 and BS EN 12056-2, and in accordance with BS EN 12056-2 National Annexes NA–NG.

- System type to BS EN 12056-2: System III ('single stack' system).

### Collection and distribution of foul water

General: Quick, quiet and complete, self-cleansing in normal use, without blockage, crossflow, backfall, leakage, odours, noise nuisance or risk to health.

Pressure fluctuations in pipework (maximum):  $\pm 38$  mm water gauge.

Water seal retained in traps (minimum): 25 mm.

## PRODUCTS

### ABS pipework

Standard: To BS 5255, Kitemark certified; or

Standard: To BS EN 1455-1, Kitemark certified.

- Application area code: B.
- Opening dimensions of access fittings, design of swept fittings, stand off dimensions of pipe and fitting brackets and requirements for adaptors and plugs: To BS 4514.

### Cast iron pipework - flexible couplings

Standard: To BS EN 877.

### MUPVC pipework

Standard: To BS 5255, Kitemark certified.

### PVC-C pipework

Standard: To BS EN 1566-1, Kitemark certified.

- Application area code: B.
- Opening dimensions of access fittings, design of swept fittings, stand off dimensions of pipe and fitting brackets and requirements for adaptors and plugs: To BS 4514.

### Polypropylene pipework

Standard: To BS 5255, Kitemark certified; or

Standard: To BS EN 1451-1, Kitemark certified.

- Application area code: B.
- Opening dimensions of access fittings, design of swept fittings, stand off dimensions of pipe and fitting brackets and requirements for adaptors and plugs: To BS 4514.

### PVC-U pipework

Standard: To BS 4514 (82.4 mm OD only); or

Standard: To BS EN 1329-1, Kitemark certified.

- Weather resistance, connectors to WC pans, opening dimensions of access fittings, design of swept fittings, stand off dimensions of pipe and fitting brackets and requirements for adaptors and plugs: To BS 4514.

### Air admittance valves

Standard: To BS EN 12380 or Agrément certified.

- Minimum air flow rate: To BS EN 12056-2.

## EXECUTION

### Installation generally

Standard: To BS EN 12056-5.

Components: From the same manufacturer for each type of pipework.

Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.

Plastics and galvanized steel pipes: Do not bend.

Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.

Concealed or inaccessible surfaces: Decorate before starting work specified in this section.

Protection:

- Purpose made temporary caps: Fit to prevent ingress of debris.
- Access covers, cleaning eyes and blanking plates: Fit as the work proceeds

### Pipe routes

General: The shortest practical, with as few bends as possible.

- Bends in wet portion of soil stacks: Not permitted.
- Routes not shown on drawings: Submit proposals before commencing work.

### **Fixing pipework**

Pipework: Fix securely plumb and/ or true to line. Fix discharge stack pipes at or close below socket collar or coupling.

Branches and low gradient sections: Fix with uniform and adequate falls to drain efficiently.

Externally socketed pipes and fittings: Fix with sockets facing upstream.

Additional supports: Provide as necessary to support junctions and changes in direction.

Vertical pipes: Provide a load bearing support not less than every storey level. Tighten fixings as work proceeds so that every storey is self supporting.

Wall and floor penetrations: Isolate pipework from structure, e.g. with pipe sleeves.

- Masking plates: Fix at penetrations if visible in the finished work.

Expansion joint sockets: Fix rigidly to the building.

Fixings: Allow the pipe to slide.

### **Jointing pipework – generally**

General: Joint with materials, fittings and techniques that will make effective and durable connections.

Jointing differing pipework systems: With adaptors intended for the purpose.

Cut ends of pipes: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.

Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.

Junctions: Form with fittings intended for the purpose.

Jointing material: Do not allow it to project into bore of pipes and fittings.

Surplus flux, solvent jointing materials and cement: Remove from joints.

### **Electrical continuity**

Joints in metal pipes with flexible couplings: Make with clips (or suitable standard pipe couplings) supplied for earth bonding by pipework manufacturer to ensure electrical continuity.

### **Identification of internal foul drainage pipework**

Markings: To BS 1710:

Type: Integral lettering on pipe wall, self-adhesive bands or identification clips.

Locations: At 500 mm centres, junctions and both sides of slabs, valves, appliances, bulkheads and wall penetrations.

### **Discharge and ventilating stacks**

Terminations: Perforated cover or cage that does not restrict airflow.

### **Installing air admittance valves**

Position: Vertical, above flood level of highest appliance served and clear of insulation materials (other than the manufacturer's insulating cover).

Connection to discharge stack: Allow removal for rodding, e.g. ring seal.

Roof spaces and other unheated locations: Fit manufacturer's insulating cover.

### **Pipework airtightness test**

Preparation:

- Open ends of pipework: Temporarily seal using plugs.
- Test apparatus: Connect a 'U' tube water gauge and air pump to pipework via a plug or through trap of an appliance.

Testing: Pump air into pipework until gauge registers 38 mm.

Required performance: Pressure of 38 mm is to be maintained without loss for at least three minutes.

### **Prehandover checks**

Temporary caps: Remove.

Permanent blanking caps, access covers, rodding eyes, floor gratings and the like: Secure complete with fixings.



## **R12 BELOW GROUND DRAINAGE SYSTEMS**

### **GENERAL**

#### **Cross-reference**

General: Read with A90 General technical requirements.

### **DESIGN**

#### **Completion of design by contractor**

Below ground drainage systems: In accordance with BS EN 752, BS EN 1295-1 and BS EN 1610.

Land drainage systems: In accordance with relevant parts of BS 4428 and BS EN 752.

### **PRODUCTS**

#### **Adaptors for above ground drainage**

To plastics drainage pipes: Plastics to BS 4660 and Kitemark certified or to BS EN 1401-1 and Kitemark certified.

To clay drainage pipes: Polypropylene to BS EN 295-1 and Kitemark certified.

#### **Access covers and frames**

Standard and cover loading grade: To BS EN 124.

#### **Concrete (general)**

Standards: To BS 8500-1 and -2.

Usage: In small quantities for general purposes including bedding of gullies and small accessories, backfilling and mass concrete surrounds to tanks.

Mixes:

- Ready mixed concrete: Designated concrete GEN1. Submit proposals if requesting higher strength mixes used elsewhere in the project to be considered.
- Site mixed concrete: Standardized prescribed concrete ST2.

#### **Concrete (structural)**

Usage: Foundations to manholes, pipe surrounds, benching/ toppings in manholes.

Mixes: See reference specification section E10 and associated work items.

#### **Concrete manholes and inspection chambers**

Standards: To BS 5911-3 and BS EN 1917 and Kitemark certified; or to BS 5911-4 and BS EN 1917.

- Cover loading grade: To BS EN 124.
- Concrete for backfilling and surrounds to tanks in nonaggressive soils: Concrete (general).

#### **Flexible couplings**

Standard: To BS EN 295-4 or Water Industry Standard WIS 04-41-01 and Kitemark certified, or Agrément certified.

#### **Granular material**

Standard: To Water Industry Specification WIS 4-08-02 (as amended 2008).

- Grade: Dependent on location – see Execution clauses in this section, and in sections R13, R16 and R17, if used.

#### **Granular sub-base material**

Standard: To Highways Agency Volume 1, 'Specification for Highway Works', Type 1 Unbound mixtures for sub-base.

#### **Grease traps and converters**

Standards: In accordance with BS EN 1825-1 and to BS EN 1825-2 and Kitemark certified, or Agrément certified.

#### **Gullies**

One piece gullies/ One piece gullies and covers/ Composite gullies: To BS EN 1253-1, -2, -3, -4 and -5; or

- Cast iron: To BS 437 and Kitemark certified, or Agrément certified.
- Clay: To BS EN 295-1 and Kitemark certified, or Agrément certified.
- Plastics: To BS 4660 and Kitemark certified, or Agrément certified.
- Polypropylene: To BS EN 1852-1.

One piece gullies/ One piece gullies and covers: To BS EN 1253-1, -2, -3, -4 and -5; or

- Concrete: To BS 5911-6 and Kitemark certified, or Agrément certified.

One piece gullies and covers/ Composite gullies:

- Cover loading grade: To BS EN 124.

#### **Manhole steps**

Standard: To BS EN 13101.

### **Pipes, bends and junctions**

Supply of pipes and fittings: From same manufacturer for each pipeline.

Material and standards:

- Cast iron – grey: To BS EN 877, Kitemark certified, with double spigot joints and proprietary coupling system.
- Vitrified clay – flexible joints: To BS EN 295-1, Kitemark certified.
- Plastics – structured wall: To BS EN 13476-1 and -2 or -3 with supplementary testing to Water Industry Standard WIS 4 -35-01 issue 2, Kitemark or Agrément certified.
- PVC-U solid wall: To BS EN 1401-1, class SN4 or SN8, with flexible joints.

### **Plastics access points**

Standard: To BS 4660 and Kitemark certified, to BS EN 13598-1, or Agrément certified.

- Cover loading grade: To BS EN 124.

### **Plastics inspection chambers**

Standard: To BS 7158 or BS EN 13598-1, or Agrément certified.

- Cover loading grade: To BS EN 124.

### **Plastics oil and petrol separator units**

Standards: To Environment Agency Pollution Prevention Guidelines PPG 3 and BS EN 858-1, with oil level alarm.

### **Precast concrete seatings for access covers and frames**

Standards: To BS 5911-3 and BS EN 1917 and Kitemark certified.

Opening sizes: To suit access covers.

### **Rodding points**

Standards:

- Clay: To BS EN 295-1 and Kitemark certified, or Agrément certified.
- Plastics: To BS 4660 and Kitemark certified, or Agrément certified.

### **Saddle connectors**

Standards:

- Cast iron: To BS 437 and Kitemark certified, or Agrément certified.
- Clay: To BS EN 295-1 and Kitemark certified, or Agrément certified.
- Concrete: To BS 5911-6 and Kitemark certified, or Agrément certified.
- Plastics: To BS 4660 and Kitemark certified, or Agrément certified.

### **Storage tanks – foul water**

Standard: To BS EN 12566-1.

## **EXECUTION**

### **General**

Standard: In accordance with BS EN 752, with National Annex NA, and BS EN 1610.

### **Stripping out**

Exposed ends of existing drainage to be abandoned: Seal with concrete (general).

### **Existing drains**

Setting out: Before starting work, check invert levels and positions of existing drains, sewers, inspection chambers and manholes against drawings. Report discrepancies.

Protection: Protect existing drains to be retained and maintain normal operation if in use.

### **Excavated material**

Turf, topsoil, hardcore, etc: Set aside for use in reinstatement.

### **Selected fill for backfilling**

Selected fill: As-dug material, free from vegetable matter, rubbish, frozen soil and material retained on a 40 mm sieve.

- Compaction: By hand in 100 mm layers.

### **Lower part of trench – general**

Trench up to 300 mm above crown of pipe: Vertical sides, width as small as practicable.

- Width: External diameter of pipe plus 300 mm (minimum).

### **Type of subsoil**

General: Where type of subsoil at level of crown of pipe differs from that stated for the type of bedding, surround or support, give notice.

### **Formation for beddings**

Timing: Excavate to formation immediately before laying beddings or pipes.

Mud, rock projections, boulders and hard spots: Remove. Replace with consolidated bedding material.

Local soft spots: Harden by tamping in bedding material.

Inspection of excavated formations: Give notice.

### **Class D bed**

Usage: Rigid pipework (clay, concrete or grey iron) laid on a natural bed.

Trench: Excavate slightly shallower than final levels.

- Trimming: By hand to accurate gradients. Replace overdig with compacted spoil.
- Pipes: Rest uniformly on barrels, adjust to line and gradient. Do not use hard packings under pipes.
- Backfilling:

- Material: Protective cushion of selected fill.
- Depth: 150 mm (250 mm for adoptable sewers) above crown of pipe.
- Compaction: By hand in 100 mm layers.

### **Class F bedding**

Usage: Rigid pipework (clay, concrete or grey iron) requiring granular bedding.

Granular material sizes: To Water Industry Specification WIS 4-08-02 (as amended 2008).

Bedding:

- Material: Granular, compacted over full width of trench.
- Thickness: 50 mm (minimum) for sleeve jointed pipes, 100 mm (minimum) for socket jointed pipes. Where trench bottom is uneven, increase thickness by 100 mm.

Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.

Backfilling:

- Material: Protective cushion of selected fill.
- Depth: 150 mm (250 mm for adoptable sewers) above crown of pipe.
- Compaction: By hand in 100 mm layers.

### **Class N bedding**

Usage: Rigid pipework (clay, concrete or grey iron) requiring as-dug material bedding.

Bedding:

- Material: As-dug material with a compaction fraction of not more than 0.3 (granular material, sizes to Water Industry Specification WIS 4-08-02 – as amended 2008 – may be substituted).
- Compaction: Over full width of trench.
- Thickness: 50 mm (minimum) for sleeve jointed pipes, 100 mm (minimum) for socket jointed pipes. Where trench bottom is uneven, increase thickness by 100 mm.

Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.

Backfilling:

- Material: Protective cushion of selected fill.
- Depth: 150 mm (250 mm for adoptable sewers) above crown of pipe.
- Compaction: By hand in 100 mm layers.

### **Class O support**

Usage: Plastics pipework requiring a full depth granular support (single size material only).

Granular material sizes: To Water Industry Specification WIS 4-08-02 (as amended 2008).

Bedding:

- Material: Granular, compacted over full width of trench.
- Thickness: 100 mm (minimum).

Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.

Support:

- Material: Granular.
- Depth: To slightly above crown of pipe.
- Compaction: By hand.

Backfilling:

- Material and depth: Protective cushion of selected fill to 300 mm above crown of pipe; or Additional granular material, to 100 mm above crown of pipe.
- Compaction: By hand in 100 mm layers.

### **Class P support**

Usage: Plastics pipework requiring a full depth granular support (single size or graded material).

Granular material sizes: To Water Industry Specification WIS 4-08-02 (as amended 2008).

Bedding:

- Material: Granular, compacted over full width of trench.
- Thickness: 100 mm (minimum).

Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.

Support:

- Material: Granular.
- Depth: To slightly above crown of pipe.
- Compaction: By hand.

Backfilling:

- Material and depth: Protective cushion of selected fill to 300 mm above crown of pipe; or Additional granular material, to 100 mm above crown of pipe.
- Compaction: By hand in 100 mm layers.

### **Class Q surround**

Usage: Plastics pipework requiring a granular surround with protection (typically shallow pipes with 600 mm cover or less in landscaped areas).

Granular material sizes: To Water Industry Specification WIS 4-08-02 (as amended 2008).

Bedding:

- Material: Granular, compacted over full width of trench.
- Thickness: 100 mm (minimum).

Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.

Surround:

- Material: Granular.
- Depth: To 75 mm (minimum) above crown of pipe.
- Compaction: By hand.

Compressible material:

- Laying: Continuously over completed surround before laying protection slabs.

Precast concrete protection slabs:

- Bearing: 300 mm (minimum).

Backfilling: Soil or topsoil, as appropriate.

### **Class W surround**

Usage: Plastics pipework requiring a granular surround (typically under solid ground floors where the cover from the underside of the slab is 300 mm or more).

Timing: Excavate trench after hardcore has been laid and compacted.

Granular material sizes: To Water Industry Specification WIS 4-08-02 (as amended 2008).

Bedding:

- Material: Granular, compacted over full width of trench.
- Thickness: 100 mm (minimum).

Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.

Surround:

- Material: Granular.
- Depth: To 100 mm above crown of pipe.
- Compaction: By hand.

Backfilling:

- Material: Hardcore as section D20, or granular.
- Depth: Up to slab formation.
- Compaction: In 300 mm (maximum) thick layers.

### **Class Y surround**

Usage: Pipework below solid ground floors, requiring a concrete surround cast integrally with a floor slab (cover from the underside of the slab is less than 300 mm).

Timing: Excavate trench after hardcore has been laid and compacted.

Blinding:

- Material: Concrete (general).
- Thickness: 25 mm (minimum).
- Width: Full width of trench.
- Allow to set before proceeding.

Pipes:

- Temporary support: Folding wedges of compressible board. Prevent flotation.
- Clearance under pipes: 100 mm (minimum).
- Adjust pipes to line and gradient.

Surround, cast integrally with slab:

- Material: Concrete of same mix as slab.
- Width: External diameter of pipe plus 200 mm (minimum).

Extent of surround: To within 150 mm of nearest flexible joint.

### **Class Z surround**

Usage: Pipework requiring a concrete surround to ensure the stability of adjacent structures.

Blinding:

- Material: Concrete (general).
- Thickness (minimum): 25 mm (minimum).
- Width: Full width of trench.
- Allow to set before proceeding.

Pipes:

- Temporary support: Folding wedges of compressible board. Prevent flotation.
- Clearance under pipes (minimum): 100 mm (minimum).
- Adjust pipes to line and gradient.

Surround:

- Material: Concrete (general).
- Depth: To 150 mm above crown of pipe.
- Width: Full width of trench.

Vertical construction joints:

- Location: At face of flexible pipe joints.
- Material: 18 mm thick compressible board precut to profile of pipe.
- Socketed pipes: Fill gaps between spigots and sockets with resilient material to prevent entry of concrete.

### **Concrete surround for pipe runs near foundations**

Class Z surround: Provide in locations where bottom of trench is lower than bottom of foundation and as follows (horizontal clear distance between nearest edges of foundations and pipe trenches):

- Trenches less than 1 m from foundations: Top of concrete surround not lower than bottom of foundation.
- Trenches more than 1 m from foundations: Top of concrete surround not lower than D mm below bottom of foundation, where D mm is horizontal distance of trench from foundation, less 150 mm.

### **Laying pipelines**

Laying pipes: To true line and regular gradient on even bed for full length of barrel with sockets (if any) facing up the gradient.

Ingress of debris: Seal exposed ends during construction.

Timing: Minimize time between laying and testing.

### **Jointing pipelines**

Connections: Durable, effective and free from leakage.

Junctions, including to differing pipework systems: With adaptors intended for the purpose.

Cut ends of pipes: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.

Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.

Allowance for movement: Provide and maintain appropriate clearance at ends of spigots as fixing and jointing proceeds.

Jointing material: Do not allow to project into bore of pipes and fittings.

### **Pipelines passing through structures**

Pipelines that must be cast in or fixed to structures (including manholes, catchpits and inspection chambers): Provide 600 mm long rocker pipes adjacent to the external face of the structure (or both faces where appropriate, e.g. walls to footings), with flexible joints at both ends.

- Distance to rocker pipe from structure: 150 mm (maximum).
- Provision for movement for pipelines that need not be cast in or fixed to structures (e.g. walls to footings):
  - Rocker pipes as specified above; or
  - Openings in the structures to give 50 mm (minimum) clearance around the pipeline. Closely fit a rigid sheet to each side of opening to prevent ingress of fill or vermin.

### **Bends at base of soil stacks**

Bedding: Do not impair flexibility of pipe couplings.

- Material: Concrete (general).

### **Direct connection of ground floor WCs to drains**

Drop from crown of WC trap to invert of drain (maximum): Comply with Building Regulations Approved/ Technical guidance documents.

Horizontal distance from the drop to a ventilated drain (maximum): 6 m.

### **Backdrop pipes outside manhole walls**

Excavation beneath backdrop pipe: Backfill.

- Material: Concrete (general).

Pipe encasement:

- Material: Concrete (general).
- Thickness (minimum): 150 mm (minimum).

### **Installing flexible couplings**

Ends of pipes to be joined: Cut cleanly and square.

Outer surfaces of pipes to be joined: Clean and smooth. Where necessary, e.g. on concrete or iron pipes, smooth out mould lines and/ or apply a cement grout over the sealing area.

Clamping bands: Tighten carefully to make gastight and watertight seals.

### **Initial testing of pipelines**

Before testing:

- Cement mortar jointing: Leave 24 h.
- Solvent welded pipelines: Leave 1 h.

Method: Block open ends of pipelines to be tested and pressurise. Air test short lengths to BS EN 1610.

### **Backfilling to pipelines**

Backfilling above top of surround or protective cushion: Material excavated from trench, compacted in layers 300 mm (maximum) thick.

Heavy compactors: Do not use before there is 600 mm (total) of material over pipes.

### **Backfilling under roads and pavings**

Backfilling from top of surround or protective cushion up to formation level: Granular sub-base material, laid and compacted in 150 mm layers.

### **Public roads and pavings – E+W, Scot**

Excavating and backfilling of trenches: To Department for Transport 'Specification for the reinstatement of openings in highways'.

### **Public roads and pavings – NI**

Excavating and backfilling of trenches: To Northern Ireland Road Authority and Utilities Committee 'Specification for the reinstatement of openings in highways'.

### **Laying warning marker tapes**

Installation: During backfilling, lay continuously over pipelines.

Depth: 300–400 mm.

- Pipelines deeper than 2 m: Lay an additional tape 600 mm above the top of the pipeline.

### **Installing access points and gullies**

Setting out relative to adjacent construction features: Square and tightly jointed.

Permissible deviation in level of external covers and gratings: +0 to -6 mm.

Raising pieces (clay and concrete units): Joint with 1:3 cement:sand mortar.

Exposed openings: Fit purpose made temporary caps. Protect from site traffic.

### **Installing rodding points**

Bedding and surround:

- Material: Concrete (general).
- Thickness (minimum): 100 mm (minimum).

Permissible deviation in level of external covers and gratings: +0 to -6 mm.

### **Installing oil and petrol separator units**

Installation: Fill tank with water then encase tank and access shafts with concrete (general) to fully support tank.

### **Fixing manhole steps**

Fixing: Bed in joints.

Positioning: 300 mm vertical centres staggered 300 mm horizontally, with lowest step 300 mm (maximum) above benching and top step 450 mm (maximum) below top of cover.

### **Joining concrete manhole chamber sections**

Inner joint surface: Trim surplus jointing material extruded into chamber and point neatly.

### **Laying conventional channels, branches and benching**

Main channel: Bed solid in 1:3 cement:sand mortar.

- Branches: Connect to channel, preferably at half pipe level, so that discharge flows smoothly in direction of main flow.
- Branches greater than nominal size 150 mm: Connect the branch soffit level with the main drain soffit.
- Connecting angles more than 45° to direction of flow: Use three-quarter section channel bends.

Concrete benching:

- Profile: Rise vertically from top of main channel to a level not lower than soffit of outlet pipe, then slope upwards at 10% to walls.
- Topping: Concrete or 1:3 Cement:Sand mortar.
- Application of topping: Before benching concrete has set, and with dense smooth uniform finish.

### **Laying preformed plastics channels, branches and benching**

Main channel: Bed solid in 1:3 cement:sand mortar.

- Branches: Connect to channel, preferably at half pipe level, so that discharge flows smoothly in direction of main flow.
- Connecting angles more than 45° to direction of flow: Use three-quarter section channel bends.

Bedding: 1:3 cement:sand mortar. Use clips or ensure adequate mechanical key.

Benching:

- Material: Concrete (general).
- Profile: Rise vertically from top of main channel to a level not lower than soffit of outlet pipe, then slope upwards at 10% to walls.
- Topping: Concrete or 1:3 Cement:Sand mortar.
- Application of topping: Before benching concrete has set, and with dense smooth uniform finish.

### **Installing access covers and frames**

Bedding and haunching of frames: Continuously.

- Top of haunching: 30 mm below surrounding surfaces.

Horizontal positioning of frames:

- Centred over openings.
- Square with joints in surrounding paving.

Vertical positioning of frames:

- Level; or
- marry in with levels of surrounding paving.

Permissible deviation in level of external covers and frames: +0 to -6 mm.

### **Exposed openings in inspection chambers, access points, fittings and equipment**

General: Fit purpose made temporary caps. Protect from site traffic.

### **Removal of debris and cleaning**

Preparation: Lift covers to manholes, inspection chambers and access points. Remove mortar droppings, debris and loose wrappings.

- Timing: Before cleaning, final testing, CCTV inspection if specified, and immediately before handover.

Cleaning: Thoroughly flush pipelines with water to remove silt and check for blockages. Rod pipelines between access points if there is any indication that they may be obstructed.

Washings and detritus: Do not discharge into sewers or watercourses.

Covers: Securely replace after cleaning and testing.

### **Temporary measures**

Water used to stabilize tanks and the like during installation: Drain.

### **Testing and inspection**

Dates for testing and inspection: Give notice.

### **Final testing of private gravity drains and sewers up to DN 300**

Before testing:

- Cement mortar jointing: Leave 24 h.
- Solvent welded pipelines: Leave 1 h.

Standard: Comply with Building Regulations Approved/ Technical guidance documents.

Method: Air or water, Contractor's choice.

### **Water testing of manholes and inspection chambers**

Timing: Before backfilling.

Standard:

- Exfiltration: To BS EN 1610. Testing with water (Method W).
- Infiltration: No identifiable flow of water penetrating the chamber.

### **Water testing of ancillary components**

Standard: To BS EN 1610.



# S90 HOT AND COLD WATER SUPPLY SYSTEMS

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

### Design and detailing by contractor

Standard: To BS EN 806-2 and BS 8558.

## PRODUCTS

### Equipment

Solar collectors: To BS EN 12975-1 and -2.

Controls: To BS EN 60730-1, BS EN 60730-2-14 and -2-9.

Instantaneous water heaters – gas: To BS EN 26.

Instantaneous water heaters and shower units – electric: To BS EN 60335-2-35, BEAB approved and/ or accepted by water supply undertaker.

Storage water heaters – gas: To BS EN 89.

Storage water heaters – electric: To BS EN 60335-2-21, BEAB approved and/ or accepted by water supply undertaker.

### Cisterns

Nonpotable water storage and feed & expansion tanks: With removable cover.

- Moulded plastics: To BS 4213.

- Grp: To BS EN 13280.

Potable water storage: To BS 7181, insulated with secured cover, screened air inlet and screened warning pipe termination assembly.

- Moulded plastics: To BS 4213.

Cistern valves: Float operated diaphragm type to BS 1212-2 or -3.

- Float: Plastics to BS 2456 size to suit water pressure.

### Hot water storage cylinders

Direct: To BS 1566-1, Kitemark certified.

Double feed indirect: To BS 1566-1, Kitemark certified.

Single feed indirect: To BS 1566-2, Kitemark certified.

Separate insulating jacket: To BS 5615.

### Insulated combination units

Standard: To BS 3198, Kitemark certified.

Combination units for hot and cold water linked to a boiler: Provide a feed and expansion cistern unless integral cistern included.

### Indirectly heated unvented hot water storage

Standard: To BS EN 12897.

### Immersion heaters

Standard: To BS EN 60335-2-73, BEAB approved.

### Metal flue pipes

Standard: To BS 715 for gas fired appliances.

### Copper pipe and fittings

Tube: To BS EN 1057, Kitemark certified.

General use: Half hard temper R250.

General use wall thickness (nominal):

- 6, 8, 10 and 12 mm pipes: 0.6 mm.

- 15 mm pipes: 0.7 mm.

- 22 and 28 mm pipes: 0.9 mm.

- 35 and 42 mm pipes: 1.2 mm.

Underground use: Soft coil temper R220 or half hard temper R250.

Underground use wall thickness (nominal):

- 6, 8, 10 and 12 mm pipes: 0.8 mm.

- 15 mm pipes: 1.0 mm.

- 22 and 28 mm pipes: 1.2 mm.

- 35 and 42 mm pipes: 1.5 mm.

Capillary fittings: To BS EN 1254-1, Kitemark certified.

Compression fittings: To BS EN 1254-2, Kitemark certified.

Fittings with threaded ends: To BS EN 1254-4, Kitemark certified.

Plastics coated copper pipelines for use below ground:

- Coating: Seamless polyethylene, to BS 3412.

### **Chromium plated copper pipe**

Tube: To BS EN 1057, Kitemark certified, half hard temper R250.

- Finish: Chromium plate, to BS EN ISO 1456, service condition 2.

Wall thickness (nominal):

- 6, 8, 10 and 12 mm pipes: 0.6 mm.
- 15 mm pipes: 0.7 mm.
- 22 and 28 mm pipes: 0.9 mm.
- 35 and 42 mm pipes: 1.2 mm.

Compression fittings: To BS EN 1254-2, Kitemark certified, Type A.

- Finish: Chromium plate to BS EN ISO 1456, service condition 3.

Fittings with threaded ends: To BS EN 1254-4, Kitemark certified.

### **Stainless steel pipe**

Tube: To BS EN 10312.

Fluxes containing chlorides or borides: Not permitted.

### **Thermoplastics pipe and fittings**

Polybutylene (PB): To BS 7291-1 and BS 7291-2, or Water Regulations Advisory Scheme (WRAS) approved and Agrément certified.

Cross-linked polyethylene (PE-X): To BS 7291-1 and BS 7291-3, or Water Regulations Advisory Scheme (WRAS) approved and Agrément certified.

### **Polyethylene pipe for use below ground**

Tube: Blue polyethylene to BS EN 12201-2.

- Jointing: Compression fittings to BS EN 12201-3.

### **Pipeline insulation**

- Fire performance: Class 1 spread of flame to BS 476-7.

### **Timers and thermostats**

Standards: To relevant parts of BS EN 60730 and C, BEAB approved.

### **Valves**

Generally: Approved by local water supply undertaker and of appropriate pressure and/ or temperature ratings.

For isolation control: With handwheels.

For isolation and regulation: With lockshields.

Ball valves: To BS EN 331.

Stop valves and draw-off taps for above ground use: Copper alloy to BS 1010-2, Kitemark certified.

Stop valves for below ground use: DZR copper alloy CZ 132 to BS 5433.

Gate valves: Copper alloy to BS 5154, Series B, Kitemark certified or BS EN 12288.

Double check valve assemblies: Copper alloy check valves to BS EN 13959 with intervening test cock to BS 2879.

Draining taps: Copper alloy to BS 2879, Type 1, hose connection pattern, Kitemark certified.

Gas plug cocks: To BS 1552.

## **EXECUTION**

### **Hot and cold water services for domestic use**

Standard: To BS EN 806-4.

### **Gas services**

Standard: To BS 6891.

### **Installation generally**

Performance: Free from leaks and audible effects of expansion, vibration and water hammer.

Fixing of equipment, components and accessories: Secure, parallel or perpendicular to building structure.

Preparation: Clear debris and projections before installing tanks and cisterns on floors or platforms.

Corrosion resistance: Use corrosion resistant fittings/ fixings and avoid contact between dissimilar metals.

### **Dezincification**

Fittings used below ground or in concealed or inaccessible locations: Gunmetal or another material resistant to dezincification.

### **Flue pipe**

Joints and bends: Minimize number.

Slope: Not more than 30° from the vertical.

Joints:

- Sockets: Uppermost.
- Supports: Fully supported and fixed securely with brackets supplied for the purpose.
- Sealing: Gas-tight, in accordance with manufacturer's instructions.
- Joints within floor void: Not permitted.

Expansion and contraction: Accommodate thermal movement.

Fire safety: Locate a safe distance from combustible materials.

Roof junction: Weatherproof.

### **Balanced flue terminal**

Opening in external wall: Submit proposals for position.

Flue guard: Required if flue may be touched.

### **Cisterns**

Outlet positions: 30 mm (minimum) above bottom.

Access clear space:

- Cistern does not exceed 450 mm in any dimension: 225 mm (minimum) above.
- Cistern does exceed 450 mm in any dimension: 350 mm (minimum) above.

### **Warning/ overflow pipes to cisterns**

Normal water level and overflow level difference (minimum):

- Cold water storage cisterns: The greater of 32 mm or the bore of warning pipe.
- Feed and expansion cisterns: To allow 20% increase in the volume of water plus 25 mm.

Supply inlet above overflow level: Bore of warning pipe (minimum).

Fall: 1 in 10 (minimum).

Support: To prevent sagging.

Exposed end: Prominent position with turned down end.

Cistern end: Turned down to terminate 50 mm below normal water level.

Insulation: Insulate within the building where subject to freezing.

### **Vent pipes over cisterns**

Route: No restrictions or valves.

Slope: Rising continuously from system connection to discharge over cistern.

Internal diameter: 20 mm (minimum).

### **Unvented hot water storage discharge pipes**

Discharge pipe size: To suit outlet on safety device and length and configuration of pipe.

- Fall: 1 in 80 (minimum).
- Discharge: Via an air break and tundish.

### **Water softeners**

Supply continuity: Fit bypass pipe and stop valves.

Drains: Overflow/ drain lines to trap and waste.

Back siphonage: Prevent back siphonage during regeneration.

## **Pipelines**

Generally to:

- BS 8000-15, clause 3.7;
- BS 5955-8, clause 6.11;
- BS EN 806-4; and
- BRE Defect Action Sheets 120 and 121.

Notches and holes in timber to:

- BS EN 806-4 clauses 4.5 and 4.7.
- Building Regulations E&W Approved Document A, section 1B6.
- Building Regulations NI Technical Booklet D, section 2.6.

Position:

- Arrangement: Straight, and parallel or perpendicular to building elements.
- Location: Within floor, ceiling and/ or roof voids.
- Access: To facilitate installation of equipment, accessories and insulation without compression.
- Maintenance: Allow sufficient space for access.
- Where routed together horizontally: Hot pipelines above cold.
- Heating pipelines: Do not run cold water pipelines near.
- Heated spaces: Do not run cold water pipelines through.
- Electrical enclosures: Do not run water pipelines through.
- Electrical equipment: Do not run water pipelines above.

## **Pipelines fixing**

Fixing: Secure and neat.

Joints, bends and offsets: Minimize.

Pipeline support: Prevent strain.

Drains and vents: Fix pipelines to falls. Fit draining taps at low points and vents at high points.

Thermal expansion and contraction: Allow for thermal movement. Isolate from structure. Prevent noise or abrasion.

Pipelines passing through walls, floors or other building elements: Sleeve.

Dirt, insects or rodents: Prevent ingress.

## **Support for copper/ stainless steel pipelines**

Fixing: Secure and true to line.

Support centres (maximum):

- 15 and 22 mm pipe: Horizontal 1200 mm, vertical 1800 mm.
- 28 and 35 mm pipe: Horizontal 1800 mm, vertical 2400 mm.
- 42 and 54 mm pipe: Horizontal 2400 mm, vertical 3000 mm.

Additional supports: Locate within 150 mm of connections, junctions and changes of direction.

## **Supports for exposed thermoplastics pipelines**

Fixing: Secure and true to line.

Support centres (maximum):

- Up to 16 mm pipe: Horizontal 300 mm, vertical 500 mm.
- 17-25 mm pipe: Horizontal 500 mm, vertical 800 mm.
- 26-32 mm pipe: Horizontal 800 mm, vertical 1000 mm.

Additional supports: Locate within 150 mm of connections, junctions and changes of direction.

## **Bends in thermoplastics pipelines**

Bends: Do not use 90° elbow fittings. Large radius bends: Support at maximum centres.

90° bends: Fix pipe clips either side of bend.

Small radius bends: Fully support 90° bends with cold form bend fixtures.

## **Polyethylene pipelines for use below ground**

Jointing: Compression fittings recommended by tube manufacturer.

## **Pipeline spacing**

Clearance (minimum) to face of wall-fixed pipes or pipe insulation:

- From floor: 150 mm.
- From ceiling: 50 mm.
- From wall: 15 mm.
- Between pipes: 25 mm.
- From electrical conduit, cables, etc: 150 mm.

### **Joints in copper/ stainless steel pipelines**

Preparation: Cut pipes square. Remove burrs.

Joints: Neat, clean and fully sealed.

Pipe ends: inserted to full depth.

Formed bends: Do not use on exposed pipework, except for small offsets.

Changes of direction: Use radius fittings.

Adaptors for connecting dissimilar materials: Purpose designed.

Substrate and plastics pipes and fittings: Do not damage.

Flux residue: Clean off.

### **Capillary joints in plastics coated pipes**

Plastics coating: Do not damage.

Completed joint: When cool, wrap with PVC tape of matching colour, half lapped.

### **Joints in thermoplastics pipelines**

Fittings and accessories for joints: Purpose designed.

Preparation: Cut pipes square. Remove burrs.

Joints: Neat, clean and fully sealed. Pipe ends: inserted to full depth.

Compression fittings: Do not overtighten.

Transition joints to boilers, circulators and adjacent to radiant heat sources: 300 mm long (minimum) copper transition tube, diameter as heating pipeline, compression jointed to pipeline and fitting.

### **Pipelines entering buildings**

Depth: Lay pipes 750 mm (minimum) below finished ground level.

Pipelines rising into building within 750 mm of the external face of the external wall or passing through a ventilated void below floor level: Insulate from finished floor level to 600 mm beyond external face of building.

Ends of pipeducts: Seal both ends to a depth of 150 mm (minimum).

### **External supply pipelines**

Pipelines exposed to air and less than 750 mm below finished ground level: Insulate.

### **Insulation to pipelines**

Standard: In accordance with BS 5970.

Cold water pipelines: Insulate in unheated spaces and to potable cold water pipelines.

Hot water pipelines: Insulate, except for short lengths in prominent positions next to appliances.

Appearance: Fix securely and neatly. Make continuous over fittings and at supports. Locate split on 'blind' side of pipeline.

Gaps: Not permitted.

Timing: Fit insulation after testing.

### **Insulation to cisterns**

Standard: In accordance with BS 5970.

General: Fix securely to sides and top of cisterns.

Gaps: Not permitted.

Access cover: Allow removal of cover with minimum disturbance to insulation.

Underside of cistern: Insulate where exposed in unheated spaces.

### **Valves**

Isolation and regulation valves: Provide on equipment and subcircuits.

Location: Next to equipment to be isolated.

Access: Locate for ease of operation and maintenance.

Connection to pipework: Fit with joints to suit pipe material.

## **COMPLETION**

### **System disinfection**

Disinfection: To BS EN 806-4.

### **Testing and commissioning**

Testing and commissioning: To BS EN 806-4.

- Notice: 3 days (minimum).

Preparation: Secure and clean pipework and equipment. Fit cistern/ tank covers.

Flushing and filling: To BS EN 806-4.

Leak testing: Start and run until all parts are at normal operating temperatures, allow to cool to cold condition for a period of 3 hours.

Pressure testing: At both hot and cold joints, fittings and components free from leaks and signs of physical distress when tested for 1 hour (minimum) as follows:

- Systems fed directly from the mains and systems downstream of a booster pump: Test pressure of 1.5 times the designed maximum operating pressure.
- Systems fed from storage: Test pressure equal to storage cistern filled to normal maximum operating level.
- Inaccessible or buried pipelines: Hydraulic pressure test to twice the maximum operating pressure.

Equipment, controls and safety devices: Check and adjust operation.

Outlets: Check operation, rate of flow and temperature.

**Testing gas pipelines**

Testing and purging: To BS 6891.

**Documentation**

Manufacturers' operating and maintenance instructions: Submit for equipment and controls.

System operating and maintenance instructions: Submit for the system as a whole giving optimum settings for controls.

Record drawings: Submit drawings showing the location of circuits and operating controls.

**Operating tools**

Tools: Supply for operation, maintenance and cleaning purposes.

Valve keys: Supply for valves and vents.

**Labels**

Isolating and regulating valves on primary circuits: Label with statement of function.

## T90 HEATING SYSTEMS

### GENERAL

#### Cross-reference

General: Read with A90 General technical requirements.

### DESIGN

#### Basic domestic room design temperatures at given ventilation rates

Living rooms: Temperature 21°C.

- Air changes: 1.5 per hour.

Dining rooms: Temperature 21°C.

- Air changes: 1.5 per hour.

Bedsitting rooms: Temperature 21°C.

- Air changes: 1.5 per hour.

Bedrooms: Temperature 18°C.

- Air changes: 1 per hour.

Halls and landings: Temperature 18°C.

- Air changes: 1.5 per hour.

Kitchens: Temperature 18°C.

- Air changes: 2 per hour.

Bathrooms: Temperature 22°C.

- Air changes: 2 per hour.

Toilets: Temperature 18°C.

- Air changes: 2 per hour.

#### Thermal insulation of building fabric - heat loss determined by contractor

Heat loss calculations: Based on U values in the specified source documents or calculated from the fabric described elsewhere.

Submit: Heat loss calculations for each room using the HEVACOMP suite of programmes or an agreed equivalent.

#### System capacity

Output of total heating surface area in any space: As near as practicable to, but not less than, design heat loss for that space.

Boiler output (minimum): Total calculated heat loss, including emission from system pipelines and sufficient to meet hot water supply requirements.

Total heat loss calculations: Allow for intermittent use, exposure, and the like.

### PRODUCTS

#### Central heating boilers

Gas fired:

- Standard boiler: To relevant parts of BS 5258-1, BS EN 483 or BS EN 297.
- Combination boiler: To BS 5258-15, BS EN 297 or BS EN 483 and BS EN 625.

Oil fired: To BS 799-2 or BS 799-3 and BS EN 15035.

#### Fires

Gas:

- Gas fire: To BS 7977-1.
- Gas fire with back boiler: To BS 7977-2.
- Inset live fuel effect gas fire: To BS EN 509 and BS 7977-1.
- Decorative fuel effect gas appliance: To BS EN 509 and BS 7977-1.

#### Chimneys and flues

Insulated chimneys with stainless steel linings for solid fuel fired appliances: To BS EN 1856-1, tested to BS EN 1859.

Insulated chimneys with stainless steel linings for oil fired appliances: To BS EN 1856-1, tested to BS EN 1859.

Flue liners: Flexible, spiral wound, austenitic stainless steel tube.

Metal flues for gas fired appliances: To BS 715, BS EN 1856-1 and BS 5440-1.

#### Oil storage tanks

Steel: To BS 799-5 and BS 5410-1.

Plastics: To OFS T100 (OFTEC) and BS 5410-1.

### **Cisterns**

Feed and expansion cisterns with removable cover:

- Moulded plastics: To BS 4213.
- GRP: To BS EN 13280.

Cistern valves: Float operated diaphragm type to BS 1212-2 or -3.

Float: Plastics to BS 2456, size to suit water pressure.

### **Circulating pumps**

Standard: To BS EN 16297-1, BS EN 16297-2 and BS EN 60335-2-51.

### **Radiators**

Standard: To BS EN 442.

### **Convectors**

Natural convectors: To BS EN 442.

Fan assisted convectors: To BS EN 442 and BS 4856-1, -2, -3, -4.

### **Copper pipelines for general use**

Standard: To BS EN 1057, Kitemark certified.

- Temper: Half hard temper R250.

Wall thickness (nominal):

- 6, 8, 10 and 12 mm nominal O.D. pipes: 0.6 mm.
- 15 mm nominal O.D. pipes: 0.7 mm.
- 22 and 28 mm nominal O.D. pipes: 0.9 mm.
- 35 and 42mm nominal O.D. pipes: 1.2 mm.

### **Microbore copper pipelines**

Standard: To BS EN 1057, Kitemark certified.

Temper: Soft coil temper R220.

Wall thickness (nominal):

- 6 and 8 mm nominal O.D. pipes: 0.6 mm.
- 10 mm nominal O.D. pipes: 0.7 mm.

### **Plastics coated copper pipelines**

Standard: To BS EN 1057, Kitemark certified.

- Coating: Seamless polyethylene, to BS 3412.

Temper: Half hard temper R250.

Wall thickness (nominal): As copper pipelines for general use.

### **Fittings for copper pipelines**

Jointing:

- Integral lead free solder ring capillary fittings: To BS EN 1254-1, Kitemark certified.

Connections to appliances and equipment:

- Compression fittings: To BS EN 1254-2, Kitemark certified.
- Fittings with threaded ends: To BS EN 1254-4.

### **Thermoplastic pipe and fittings**

Polybutylene (PB): To BS 7291-2.

Cross linked polyethylene (PE-X): To BS 7291-3.

### **Pipeline insulation**

Material: Preformed flexible plastics closed cell foam or mineral fibre split tube.

Thermal conductivity: 0.04 W/m<sup>2</sup>K (maximum).

Thickness:

- Heating and primary pipelines: Equal to the outside diameter of the pipe up to 40 mm (maximum).
- Internal cold water pipelines: 25 mm.
- Roof space cold water pipelines: 32 mm.
- External cold water pipelines: 38 mm.
- Fire performance: Class 1 spread of flame to BS 476-7.

### **Controls**

Programmable: To relevant parts of BS EN 60730 and BS EN 61058, BEAB approved.

Timers and thermostats: To relevant parts BS EN 60730 and BS EN 61058, BEAB approved.

- Types: Recommended for purpose.



## Valves

Generally:

- Types: Approved for the purpose by local water supply undertaker and of appropriate pressure and temperature ratings.
  - Control of valves: Fit with handwheels for isolation and lockshields for isolation and regulation of circuits or equipment.
- Motorized valves: To relevant parts of BS EN 60730 and BS EN 61058, BEAB approved.  
Manual radiator valves: Copper alloy to BS 2767.  
Thermostatic radiator valves: To BS EN 215-1 and capable of providing isolation.

## EXECUTION

### System performance

Control:

- Controls: Compatible with each other and with the central heating boiler.
- Temperature and time control: Fully automatic and independent.

Domestic heating systems: To Water Supply Regulations/ Byelaws and the requirements of the water supply undertaker.

### Installation generally

Performance: Free from leaks and the audible effects of expansion, vibration and water hammer.

Fixing of equipment, components and accessories: Fix securely, parallel or perpendicular to the structure of the building.

Preparation: Clear debris and projections before installing tanks and cisterns on floors or platforms.

Corrosion resistance: Use corrosion resistant fittings/ fixings and avoid contact between dissimilar metals.

Electrical work: To BS 7671.

Fire resisting pipe sleeves:

- Types and sizes: Recommended by manufacturer.
- Sealing around services: Fill space completely. Finish neatly.  
Decoration and other work: Drop radiators when required.

### Gas fired boilers

Installation: To BS 6798.

Space around the boiler:

- Ensure sufficient air circulation for draught diverter operation.
- Ensure sufficient air for combustion and cooling.
- Sufficient for maintenance and servicing.

Combustible material: Either 75 mm clear of the boiler, or lined with non-combustible material.

Combination boilers:

- Expansion vessel connection pipework: Locate the neutral point of the system in the return pipework close to the heat generator.
- Fill point location: Between the expansion vessel connection point and circulation pump inlet.

### Solid fuel fired roomheaters with backboiler

Installation: To BS 8303-3.

Hearth: Place appliances wholly or partially upon constructional hearths or upon finished hearths constructed of non-combustible materials.

Existing flues: Ensure flue is clean, clear of obstructions, in a sound condition and of adequate size.

### Gas fires

Type: With or without back boiler.

- Installation: To BS 5871-1.

Room sealing: Room seal appliances installed in spaces containing baths, showers or beds.

### Fuel effect gas fires

Installation: To BS 5871-2.

Siting: Stand on a hearth or floor, or secure to wall.

Existing chimneys: Remove dampers or restrictor plates in the chimney, or where this is not practicable, permanently fix in the fully open position.

Live fuel effect gas fires:

- Sealing: To eliminate the entry of excess air into the flue, seal fire into position.

Decorative fuel effect gas fires:

- Servicing: Install appliances so they can be removed for servicing.

### Flue pipes

Installation: To BS 5440-1.

Joints and bends: Minimize number.

Slope: Not more than 30° from the vertical.

Joints: Install with sockets uppermost, fully supported and fixed securely with brackets supplied for the purpose. Do not locate joints within the depth of floors.

- Seals: Seal to provide a gas-tight installation.

Expansion and contraction: Accommodate thermal movement.

Fire safety: Locate a safe distance from combustible materials.

Roof junction: Weatherproof. Fit terminal and flashings, collars etc.

### **Flexible flue liners**

Installation: Complete, gas tight.

Flue: Unobstructed and clean.

Liner: One piece.

- Fixing: Fix securely at top of stack and to boiler with purpose-made clamps.
- Joint at boiler: Seal. Fill completely with jointing material.

### **Existing chimneys**

Preparation: Clean thoroughly. Check for obstructions and blockages.

Tests: Carry out core ball test and smoke test.

- Programme: Give notice.
- Obstructions or leaks: Submit proposals for making good.

### **Air supply to contractor design appliances**

Air supply requirements: Submit details.

Sizes and locations of vents: Submit proposals.

### **Oil storage tanks**

Installation: To BS 5410-1.

### **Feed and expansion cisterns**

Installation: To BS EN 806-4.

Outlet positions: 30 mm (minimum) above base.

Access clear space (minimum):

- Cistern does not exceed 450 mm in any dimension: 225 mm above.
- Cistern does exceed 450 mm in any dimension: 350 mm above.

Mounting height (minimum): One metre above highest point of circulation system, unless boiler manufacturer's recommendations allow less.

Location: Sufficient space for cleaning and maintenance, with enough clearance above the tank to service the valve and accommodate the expansion pipe.

Plinth: Firm and level. Ensure adequate distribution of the load - especially if required to be carried by trussed rafters.

Installation of insulation:

- General: Fix securely to sides and top of cisterns. Leave no gaps.
- Access cover: Allow removal of cover with minimum disturbance to insulation.
- Underside of cistern: Insulate where exposed in unheated spaces.

### **Warning and overflow pipes to feed and expansion cisterns**

Difference (minimum) between normal water level and overflow level:

- Feed and expansion cisterns: Sufficient to allow 20% increase in the volume of water in the tank, plus 25 mm.

Vertical distance (minimum) of water supply inlet above overflow level: Bore of warning pipe.

Fall: 1 in 10 (minimum).

Installation: Support to prevent sagging. Terminate pipes separately in prominent positions with turned down ends. Turn down within the cistern. Terminate 50 mm below normal water level.

Insulation: Insulate within the building where the pipe is in an un-insulated space and subject to freezing.

### **Vent pipes over feed and expansion cisterns**

Route: Install with no restrictions or valves and rising continuously from system connection to discharge over cistern.

Internal diameter: 20 mm (minimum).

### **Circulating pumps**

Location: Readily accessible positions.

Installation: As recommended by manufacturer.

### **Radiators**

Towel warmers: Install on primary hot water circuit.

## **Pipelines**

Generally to:

- BS 8000-15, clause 3.7;
- BS 5955-8, clause 6.11;
- BS EN 806-2, clause 5 and
- BRE Defect Action Sheets 120 and 121.

Notches and holes in timber to:

- BS 8558, Figure 14.
- Building Regulations Eng Approved Document A, section 1B6.
- Building Regulations Wales (E&W) Approved Document A, section 1B6.
- Building Regulations NI Technical Booklet D, section 2.6.

Position:

- Arrangement: Straight, and parallel or perpendicular to building elements.
- Location: Within floor, ceiling and/ or roof voids.
- Access: To facilitate installation of equipment, accessories and insulation without compression.
- Maintenance: Allow sufficient space for access.
- Where routed together horizontally: Hot pipelines above cold.
- Heating pipelines: Do not run cold water pipelines near.
- Heated spaces: Do not run cold water pipelines through.
- Electrical enclosures: Do not run water pipelines through.
- Electrical equipment: Do not run water pipelines above.

### **Pipelines fixing general**

Fixing: Secure and neat.

Joints, bends and offsets: Minimize.

Pipeline support: Prevent strain.

Drains and vents: Fix pipelines to falls. Fit draining taps at low points and vents at high points.

Thermal expansion and contraction: Allow for thermal movement. Isolate from structure. Prevent noise or abrasion.

Pipelines passing through walls, floors or other building elements: Sleeve.

Dirt, insects or rodents: Prevent ingress.

Spacing:

- Clearance (minimum) to face of wall-fixed pipes or pipe insulation:  
From floor: 150 mm.  
From ceiling: 50 mm.  
From wall: 15 mm.  
Between pipes: 25 mm.  
From electrical conduit, cables, etc: 150 mm.

### **Copper and plastics coated copper pipelines**

Jointing:

- Preparation: Cut pipes square. Remove burrs.
- Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
- Bends: Do not use formed bends on exposed pipework, except for small offsets. Form changes of direction with radius fittings.
- Adaptors for connecting dissimilar materials: Purpose designed.
- Substrate and plastics pipes and fittings: Do not damage, e.g. by heat when forming soldered joints.
- Flux residue: Clean off.

Capillary joints in plastics coated pipelines:

- Plastics coating: Do not damage, e.g. by direct or indirect heat. Wrap completed joint (when cool) with PVC tape of matching colour, half lapped.

Support centres (maximum):

- 15 and 22 mm pipes: Horizontal 1200 mm, vertical 1800 mm.
- 28 and 35 mm pipes: Horizontal 1800 mm, vertical 2400 mm.
- 42 and 54 mm pipes: Horizontal 2400 mm, vertical 3000 mm.

Additional supports: Within 150 mm of connections, junctions and changes of direction.

### **Thermoplastics pipelines**

Bends:

- 90° elbow fittings to form bends: Not permitted.
- Large radius bends: Support at maximum centres.
- 90° bends: Fix pipe clips either side of bend.
- Small radius bends: Fully support 90° bends with cold form bend fixtures.

Support centres (maximum):

- Up to 16 mm pipes: Horizontal 300 mm, vertical 500 mm.
- 17–25 mm pipes: Horizontal 500 mm, vertical 800 mm.
- 26–32 mm pipes: Horizontal 800 mm, vertical 1000 mm.

Fixing: Secure and true to line.

Additional supports: Provide as necessary within 150 mm of connections, junctions and changes of direction.

### **Bends in thermoplastics pipelines**

Bends: Do not use 90° elbow fittings. Large radius bends: Support at maximum centres.

90° bends: Fix pipe clips either side of bend.

Small radius bends: Fully support 90° bends with cold form bend fixtures.

### **Insulation to pipelines**

Cold water pipelines: Insulate in unheated spaces and to potable cold water pipelines.

Hot water pipelines: Insulate, except for short lengths in prominent positions next to appliances.

Appearance: Fix securely and neatly. Make continuous over fittings and at supports. Leave no gaps. Locate split on 'blind' side of pipeline.

Gaps: Not permitted.

Timing: Fit insulation after testing.

### **Reflective aluminium foil**

Installation: Cut neatly to size 25 mm smaller than radiator and fix behind radiators.

### **Valves**

Isolation and regulation valves: Provide on equipment and subcircuits.

Location: Next to equipment to be isolated.

Access: Locate for ease of operation and maintenance.

Connection to pipework: Fit with joints to suit the pipe material.

Lockshield valves: Fitted to return side of radiators.

## **COMPLETION**

### **Testing and commissioning**

Notice: 3 days (minimum).

Preparation: Secure and clean pipework and equipment. Fit cistern/ tank covers.

Leak testing: Start and run until parts are at normal operating temperatures, allow to cool to cold condition for a period of 3 hours.

Pressure testing: At both hot and cold joints, fittings and components free from leaks and signs of physical distress when tested for 1 hour (minimum) as follows:

- Systems fed directly from the mains and systems downstream of a booster pump: Test pressure of 1.5 times the designed maximum operating pressure.
- Systems fed from storage: Test pressure equal to storage cistern filled to normal maximum operating level.
- Inaccessible or buried pipelines: Hydraulic pressure test to twice the maximum operating pressure.

Equipment, controls and safety devices: Check and adjust operation.

### **Testing gas pipelines**

General: Test and purge.

- Standard: To BS 6891.

### **Documentation**

Manufacturers' operating and maintenance instructions: Submit for equipment and controls.

System operating and maintenance instructions: Submit for the system as a whole giving optimum settings for controls.

Record drawings: Submit drawings showing the location of circuits and operating controls.

Water Regulations/ Byelaws notifications and certificates: See Preliminaries, section A33.

Gas installation certification: See Preliminaries, section A33.

### **Operating tools**

Tools: Supply for operation, maintenance and cleaning purposes.

Valve keys: Supply for valves and vents.

### **Labels**

Isolating and regulating valves on primary circuits: Label with statement of function.

## U90 GENERAL VENTILATION

### GENERAL

#### Cross-reference

General: read with A90 General technical requirements.

### PRODUCTS

#### Ventilators for heating appliances

General: Not adjustable. Not restricted, e.g. with mesh.

#### Air vents and ducts for gas appliances (rated input not exceeding 70 kW)

Standard: To BS 5440-2.

#### Safety of household and similar electrical equipment

Range (cooker) hoods: To BS EN 60335-2-31, BEAB approved.

Fan units: To BS EN 60335-2-80, BEAB approved.

Pull cord switches: To BS EN 61058-2-1.

### EXECUTION

#### Site applied insulation

Location: Fit insulation to ductwork in unheated spaces.

Installation: Fix securely. Leave no gaps. Make continuous.

#### Ductwork

Rigid duct: Install complete, with necessary bends, junctions, reducers, connectors, and adaptors.

- Installation: Do not distort or reduce cross-sectional area. Do not strain joints.

Flexible duct: Install complete, with necessary junctions, reducers, connectors, and adaptors.

- Installation: Fully extend. Do not overstretch. Form smooth flowing curves without kinking, sagging or slumping.

Joints: Seal. Provide a robust airtight installation.

Falls: Fall away from fans, dampers and other in-line accessories.

Sleeves: Where ducts pass through building fabric. Bed solidly to the surrounding construction.

- Gap filling: 10–20 mm between sleeve and duct, fill completely.

#### Passive stack ventilation systems

Duct runs: As short and straight as possible: Smooth curvature to offsets.

Arrangement: Do not install ducts at more than 45° from vertical.

Air leakage: Prevent where ducts enter rooms and around inlet grilles.

#### Ventilators for heat appliances

Free area: Do not obstruct or restrict.

Opening adjustment: Not permitted.

Insect screens: Not permitted.

#### Condensate drains

Access: Provide for cleaning.

### COMPLETION

#### Commissioning

Ventilation system: Balance airflow using methods recommended by the system manufacturer.

Operation: Examine ductwork for leakage.

- Test: Fans, equipment, controls and sensors.
- Submit: Report verifying correct operation.

#### Operation and maintenance

Operating and maintenance instructions:

- Submit: Manufacturers' operating and maintenance instructions for equipment and controls.

Tools: Supply tools for operation, maintenance and cleaning purposes, including keys for valves and vents.

# V90 ELECTRICAL INSTALLATION

## GENERAL

### Cross-reference

General: Read with section A90 General technical requirements.

## DESIGN

### General electrical installation

Standard: To BS 7671.

### Internal lighting

Standard: To 'SLL Code for lighting'.

### External lighting

Standards: To BS 5489-1, 'SLL Code for lighting' and CIBSE 'Lighting Guide 6'.

### Emergency lighting

Standard: To BS 5266-1.

### Photovoltaic systems

Standards:

- Generally: To IEC 60364-7-712, and in accordance with ENA Engineering recommendation G59/3 or ENA Engineering Recommendation G83/2, and DTI Report No S/P2/00282.
- Roof mounted: To BS EN 1991-1-4 and in accordance with BRE Digests 489 and 495.

### Small scale wind generating systems

Wind turbines: To BS EN 61400-2.

## PRODUCTS

### Conduit and trunking

Types and sizes: Suitable for operating conditions.

Steel conduit and fittings: To BS 4568-1 or BS EN 61386-1.

PVC conduit and fittings: To BS 4607-1 or BS EN 61386-21.

Steel surface trunking systems: To BS EN 50085-1 and -2-1.

PVC surface trunking systems: To BS 4678-4 or BS EN 50085-1 and -2-1.

Steel underfloor ducting system: To BS 4678-2.

### Cable Tray

Standard: To BS EN 61537.

Types and sizes: Suitable for operating conditions.

### Cables

Standard: BASEC certified.

Types and sizes: To BS 7671.

### Consumer control units and distribution boards

Consumer control units: To BS EN 60439-3 or BS EN 61439-3, ASTA certified.

Distribution boards: To BS EN 60439-3 or BS EN 61439-3, ASTA certified.

Main control rating: Suit maximum demand.

Number of ways: Permanently label each way to identify circuit function, cable size and protective device rating.

Circuit protection: Miniature circuit breakers to BS EN 60898-1 or fuses to BS HD 60269-2 or BS HD 60269-3.

Additional circuit protection: To BS EN 61008-1 or BS EN 61009-1.

## **Equipment and accessories**

Minor accessories needed to complete the installation: Types recommended for purpose by relevant manufacturer.

Electrical accessories: Complete with mounting boxes.

Choice of manufacturer: Submit details of selected manufacturer with relevant catalogues.

Thirteen amp socket outlets: To BS 1363-2.

Socket outlets with integral RCD: To BS 7288.

Fused connection units: To BS 1363-4.

Shaver outlets: Single voltage to BS 4573, dual voltage to BS EN 61558-2-5.

Coaxial cable socket outlet: To BS 5733 and BS EN 60669-1.

Wall mounted switchplates: To BS EN 60669-1.

Ceiling mounted pullcord switches: To BS EN 61058-2-1.

Ceiling roses: To BS 67.

Bayonet cap lampholders: To BS EN 61184.

Edison screw lampholders: To BS EN 60238.

Compact fluorescent lampholders: To BS EN 60061-2.

Photoelectric control units for control of individual lights or lighting circuits: To BS 5972.

Television antennae: In accordance with CAI Aerial benchmarking scheme.

Electric thermal storage heaters: To BS EN 60335-2-61, BEAB approved.

Electric room heaters: To BS EN 60335-2-30, BEAB approved.

Electric heated towel rails and sauna heaters: To BS EN 60335-2-43, BEAB approved.

Time switches: To BS EN 60730-1 and BS EN 60730-2-7, BEAB approved.

Photoelectric control units for control of individual lights or lighting circuits: To BS 5972.

## **Emergency lighting systems**

Luminaires and related components: Registered under Industry Committee for Emergency Lighting (ICEL) Product Registration Scheme.

Luminaires, including self contained emergency lighting luminaires: To BS EN 60598-2-22.

Luminaires modified for emergency use: Certified to ICEL 1004.

## **Photovoltaic systems**

Crystalline silicon terrestrial photovoltaic (PV) modules: To BS EN 61215.

Thin film terrestrial photovoltaic (PV) modules: To BS EN 61646.

Junction Boxes and switchgear assemblies: To BS EN 60439-1 or to BS EN 61439-1 and -2.

## **EXECUTION**

### **Circuits**

Arrangement: Divide installation into separately controlled circuits. Subdivide further where necessary.

### **Installation generally**

Performance: Provide a safe, well insulated, earth protected system capable of supplying the anticipated maximum demand.

Supports and fasteners: Corrosion resisting where moisture is present or may occur. Avoid contact between dissimilar metals.

### **Switchgear**

Clearance in front of switchgear (minimum): 1 m.

Labelling: Permanently label each way, identifying circuit function, rating and cable size.

Enclosure identification: Label with project reference.

### **Cable trays**

Access: Provide space encompassing cable trays to permit access for installing and maintaining cables.

Cutting: Along an unperforated line. Minimize. Make good edges. Treat surface as the tray.

### **Cable baskets**

Access: Provide space encompassing cable trays to permit access for installing and maintaining cables.

Cutting: Side action bolt croppers. Minimize. Make good cut edges by treating to same standard as the basket.

### **Conduit and fittings**

Fixing: Fix securely. Fix boxes independently of conduit.

Location: Position vertically and horizontally in line with equipment served, and parallel with building lines. Locate where accessible.

Jointing:

- Number of joints: Minimize by using maximum practicable lengths of conduit.
- Cut ends: Remove burrs, and plug during building works.
- Movement joints in structure: Manufactured expansion coupling.
- Threaded steel conduits: Tightly screw to ensure electrical continuity, with no thread showing.
- Conduit connections to boxes and items of equipment, other than those with threaded entries: Earthing coupling/ male brass bush and protective conductor.

Changes of direction: Use site machine formed bends, junction boxes and proprietary components. Do not use elbows or tees. Alternatively, use conduit boxes.

Connections to boxes, trunking, equipment and accessories: Use appropriate screwed couplings, adaptors, connectors and glands. Provide rubber bushes at open ends.

### **Conduit in concrete**

Fixing: Securely to reinforcement. Boxes to formwork to prevent displacement.  
Concrete cover: As for reinforcement.

### **Drainage of conduit**

Drainage outlet locations: At lowest points in conduit installed externally and where condensation may occur.

### **Trunking/ Ducting/ Cable management systems**

Positioning: Accurately with respect to equipment served and, where relevant, floor level.

Access: Provide space around cable trunking to permit access for installing and maintaining cables.

Jointing:

- Number of joints: Minimize by using maximum practicable lengths of conduit.
- Steel systems: Use mechanical couplings; do not weld. Fit a copper link at each joint to ensure electrical continuity.
- Movement joints in structure: Manufactured expansion coupling.

Fixing: Fix securely. Restrain floor mounted systems to prevent movement during screeding.

Junctions and changes of direction: Use proprietary units.

Cable exit holes: Fit grommets, bushes or liners.

Protection: Do not damage components. Fit temporary blanking plates to prevent ingress of screed and other extraneous materials.

Service outlet units: Fit when cables are installed.

### **Fire stopping of trunking/ ducting**

Trunking/ ducting passing through fire resisting construction: Seal internally.

- Sealing material: Submit proposals.

### **Cable routes**

Cables generally: Conceal wherever possible:

- Concealed cable runs to wall switches and outlets: Vertically in line with the accessory.

Exposed cable runs: Submit proposals.

- Orientation: Straight, vertical and/ or horizontal and parallel to walls.

Distance from other services running parallel: 150 mm minimum.

- Position cables below heating pipes.

### **Installing cables**

General: Install cables neatly and securely. Protect against accidental damage, adverse environmental conditions, mechanical stress and deleterious substances.

Timing: Do not start internal cabling until building enclosure provides permanently dry conditions.

Jointing: At equipment and terminal fittings only.

Cables passing through masonry walls: Sleeve with conduit bushed at both ends.

Cables surrounded or covered by insulation: Derate.

### **Protective conductors**

Type: Cable conductors.

### **Armoured cables**

Temperature: Do not start installation if cable or ambient temperature is below 0°C, or has been below 0°C during the previous 24 hours.

Galvanized steel guards: Fit where cables are vulnerable to mechanical damage.

Earthing: Bond armour to equipment and main earthing system.

Connections to apparatus: Moisture proof. Use sealed glands and PVC shrouds.

### **PVC sheathed cables**

Low temperatures: Do not install if ambient temperature is below 5°C.

### **MICC cables**

Bending: Do not corrugate sheath.

Equipment and boxes: Connect with PVC shrouded glands.

Cable fasteners: Clips and spacings recommended by manufacturer and within 150 mm of bends and connections.

Testing: Test each length immediately after fixing. Repeat 24-48 hours later.

### **Cables laid directly in the ground**

Cable bedding: 75 mm of sand.

Backfilling: 75 mm of sand over cables, then as-dug material.

Marker tape: nominally 250 mm above cable.

Multiple cables in same trench: Set 150 mm apart.

Cables below roads and hardstandings: Ducted, derate if longer than 10 m.

### **Cables entering buildings from below ground**

Pipeducts: Seal at both ends.

Method: Submit proposals.

### **Cables in plaster**

Cover: Galvanized steel channel. Nail to substrate.



### **Cables in vertical trunking/ ducts**

Support: Pin racks or cleats at each floor level or at 5 m vertical centres, whichever is less.  
Heat barrier centres (maximum): 5 m.  
Heat barriers: Required except where fire resisting barriers are not provided.

### **Cables in accessible roof spaces**

Cables running across ceiling joists: Fasten to timber battens fixed to joists.

### **Fixing electrical accessories/ equipment**

Location: Coordinate with other wall or ceiling mounted equipment.  
Positions: Accurate. Square to vertical and horizontal axes.  
Alignment: Place adjacent accessories on the same vertical or horizontal axis, as appropriate.

### **Multigang switches**

Connection: Provide a logical relationship with luminaires. Fit blanks to unused switch spaces.  
Segregation: Internally segregate each phase with phase barriers and warning plates.  
Location: To suit requirements of Building Regulations.

### **Luminaires, lamp holders and pendant sets**

Supports: Adequate for weight of luminaire.  
Lamps: Provide.

### **External luminaires and lighting columns**

Cleanliness: Check seals for particle ingress and clean before sealing.  
Columns: Install to Highways Agency 'Specification for highway works'.

### **Earth bars**

Location: At incoming electrical service position.  
Mounting: Wall mounted on insulated supports.

### **Labelling**

Identification and notices generally:

- Standards: To BS ISO 7010 and BS ISO 3864-4.
  - Equipment: Label when a voltage exceeding 230 V is present.
- Distribution boards and consumer units: Card circuit chart within a reusable clear plastic cover. Fit to the inside of each unit. Include typed information identifying the outgoing circuit references, their device rating, cable type, size, circuit location and details. Label each outgoing way corresponding to the circuit chart.
- Sub-main cables: Label at both ends and to both sides of wall/ floor penetrations with proprietary cable markers.
- Photovoltaic systems:
- Provide dual supply warning notices (grid connected systems only) stating that the system is energized from more than one source.
  - PV modules: Label with warning notices describing the presence of live terminals.
  - A.C. isolation switches: Label with notices stating 'PV system – Point of emergency switching'.
  - Circuit diagram: Provide at point of interconnection.
  - Details of protective settings incorporated in the PCU: Provide at point of interconnection.
  - Fuses, terminal blocks and other assembly components: Label describing their purpose.
  - Spare fuses: Label, describe their rating and purpose.
- Small scale wind generators:
- Content of turbine nameplate: Wind turbine manufacturer and country; production year; rated power; reference wind speed; hub height operating wind speed range; operating temperature range; wind turbine class; rated voltage at the wind turbine terminals; frequency at the wind turbine terminals or frequency range in the case where normal variation is greater than 2%.

### **Emergency lighting systems**

Standards: To the most onerous requirements of BS 5266-1, BS EN 1838, BS EN 50171, BS EN 50172 and the Health and Safety (Safety Signs and Signals) Regulations.

### **Emergency luminaires**

Permanent electrical supplies: Derive from adjacent local lighting circuit.  
Charge indicator: Position in a conspicuous location.

### **Engraving**

Metal and plastic accessories: Engrave, indicating their purpose.  
Emergency lighting test key switches: Describe their function.  
Multigang light switches: Describe the luminaire arrangement.

### **Photovoltaic modules**

Fix independently of any other systems installation with zinc electroplated fasteners indoors and stainless steel fasteners outdoors.

### **Small scale wind generators**

Standard: To BS EN 61400-2.

General: Separate dissimilar materials to prevent bi-metallic corrosion.

Building mounted turbine support poles and fixings: Do not fix fasteners into mortar courses.

## **COMPLETION**

### **Inspection and testing**

Testing and commissioning: To BS 7671.

Notice before testing (minimum): 24 hours.

Labels and signs required by Regulations: Fix securely in correct locations before system is tested.

Evidence: System log books, inspection and completion certificates.

Emergency lighting system:

- Standard: To BS 5266-1.
- Test certificates: To BS 5266-1, Annex C.
- System log book: To BS 5266-1.

External lighting system:

- Standard: In accordance with CIBSE Lighting guide 6.
- Method: Test results based on average illuminance measurement method using a full grid.

Photovoltaic systems:

- Generally: To International Electrotechnical Commission IEC 60364-7-712, ENA Engineering recommendation G59/3 or ENA Engineering recommendation G83/2, and DTI Report No S/P2/00282.

### **Final fix**

Accessory faceplates, luminaires and other equipment: Fit after completion of decorations.

### **Cleaning**

All electrical equipment: Clean immediately before handover.

### **Training**

General: Before Completion, explain and demonstrate the purpose, function, operation and maintenance of the facility to end user nominees.

Scope: Use items and procedures listed in the Building Manual as the basis for instruction.

Times and locations: Submit proposals. Include for items requiring seasonal operation.

# W50 FIRE DETECTION AND ALARM SYSTEMS

## GENERAL

### Cross-reference

General: Read with section A90 General technical requirements.

## PRODUCTS

### Equipment and accessories

For dwellings systems:

- Carbon monoxide alarms: To BS EN 50291 and BS EN 50292.
- Smoke alarms: To BS EN 14604, Kitemark certified.

For non dwellings systems:

- Automatic door release devices: To BS 5839-3 or BS EN 1155.
- Control equipment: To BS EN 54-2.
- Manual call points: To BS EN 54-11.
- Optical beam smoke detectors: To BS EN 54-12.
- Point flame detectors: To BS EN 54-10.
- Point heat detectors: To BS EN 54-5.
- Point smoke detectors: To BS EN 54-7.
- Power supply: To BS EN 54-4.
- Sounders: To BS EN 54-3.
- Visual alarm devices: To BS EN 54-23

### Cables

PVC: To BS 6004, or to BS EN 50525-1 and -2-31.

LSZH (low smoke zero halogen): To BS 7211, or to BS EN 50525-1 and -3-41.

Standard fire resisting: To BS 5839-1.

Enhanced fire resisting: To BS 5839-1.

General:

- Minor accessories needed to complete the installation: Types recommended for purpose by relevant manufacturer.

## EXECUTION

### Design and installation

Standard: To BS 5839-1 or BS 5839-6 and LPCB LPS 1014. Issue 5.1, as appropriate.

### Installing equipment and accessories

Standards: To BS 7671 and in accordance with BS 5839-1 or BS 5839-6 (dwellings) as applicable.

Location: To provide safe access for maintenance and testing.

Environment at installation: Clean and dust free.

Mains power supply: Dedicated circuit from the building's main switchboard or consumer unit.

Cables: PVC to BS 6004 or to BS EN 50525-1 and -2-31. LSZH to BS 7211 or to BS EN 50525-1 and -2-41 (dwellings):

Standard fire resisting or enhanced fire resisting to BS 5839-1 (non dwellings).

### Domestic fire alarm detection and alarm system testing and commissioning

Standard: In accordance with BS 5839-6.

Smoke alarms: Verify the operation using smoke canisters.

Standby operation: Verify.

Certification: To BS 5839-6, Annex E or F.

Notice: 24 hours (minimum) before testing.

### Commercial fire alarm detection and alarm system testing and commissioning

Standard: In accordance with BS 5839-1.

Smoke alarms: Verify the operation using smoke canisters.

Standby operation: Verify.

Certification: To BS 5839-1, Appendices G.

Log book: To BS 5839-1, Appendix F.

Notice: 24 hours (minimum) before testing.

### Cleaning

All equipment: Clean immediately before handover.

### Training

General: Before Completion, explain and demonstrate the purpose, function, operation and maintenance of the facility to end user nominees.

Scope: Use items and procedures listed in the Building Manual as the basis for instruction.

Times and locations: Submit proposals. Include for items requiring seasonal operation.

# X90 LIFT SYSTEMS

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## PRODUCTS

### Products generally

Standards:

- Powered stairlifts: To BS EN 81-40.
- Powered lifting platforms for use by disabled persons: To BS EN 81-40.
- Electric traction lifts: To BS EN 81-2.
- Hydraulic lifts: To BS EN 81-3.
- Fire fighting lifts: To BS EN 81-72 and in accordance with BS 9999.

## EXECUTION

### Completion of design

Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

Submittals to include:

- Overall dimensions.
- Dimensioned drawings, plans, elevations and sections.
- Building loadings.
- Builder's work requirements.
- Mounting and fixing details.
- Schedule of labels.
- Controls and instrument wiring diagrams.
- Electrical requirements including full load currents, starting currents and their duration, and protective device types and sizes.

Evidence of compliance with The Lifts Regulations 1997: Submit.

### Installing control cabinets

Positioning: Accurately and square to vertical and horizontal axes.

Alignment: Align adjacent accessories on the same vertical or horizontal axis.

Fixing: Secure, plumb and level.

### Machine rooms

Machine temperature control: Maintain within limits of BS EN 81-1 and -2.

### Testing and commissioning

Standards:

Electric lifts: To BS EN 81-1 and BS 8486-1.

Hydraulic lifts: To BS EN 81-2 and BS 8486-2.

### Notices and instructions

Standard: To BS EN 81-1 and -2.

Emergency lift evacuation procedure: Include within building health and safety file.

Wall mounted single line diagrams: Required.

- Content: Describe the power distribution system serving the lift. Include power sources, points of isolation and device ratings.

Circuit charts for switchgear associated with the lift system: Required.

Instruction manual: Required.

- Content: Drawings and diagrams necessary for normal use of the lift, emergency use, rescue, maintenance, repair and periodic checking.

Maintenance instructions: To BS EN 13015.

### Equipment labelling

Switches, controls, enclosures and terminations: Clearly and indelibly label describing their purpose. Identify the off position.

### Documentation

To include for each lift: Operation and maintenance instructions, record drawings, certificates, instruction manual, log book (hard back cover embossed with the lift name and unique lift identification reference with A4 lined paper, minimum 100 pages).

### Training

Timing: Before completion.

Scope to include: Daily lift operation, routine and general maintenance, emergency passenger release procedure.

**Rope inspection and adjustment**

Lift ropes: Check and adjust 6 months after lift systems have been put into service.

**Maintenance**

Servicing and maintenance: Undertake.

Duration: Until 12 months after Practical Completion.

# Z10 PURPOSE MADE JOINERY

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## EXECUTION

### Fabrication

Joinery components, timber and workmanship: To BS 1186-2.

Sections: Formed out of solid.

Lengths and profiles: Accurate.

Sections after machining: Free from twist and bowing.

Surfaces after machining: Smooth and free from tearing, wooliness, chip bruising and other machining defects.

Joints: Tight, close fitting.

Components: Rigid. Free from distortion.

Screws: Provide pilot holes.

Screws of 8 gauge (4mm diameter) or more and screws into hardwood: Provide clearance holes.

Screw heads: Sunk at least 2 mm below surfaces visible in completed work.

Adhesive: Compatible with wood preservatives applied and end use of timber.

### Permitted deviations from timber finished sizes (maximum)

Softwood:

- Sawn sections: To BS EN 1313-1, clause 6.

Hardwood:

- Sawn sections: To BS EN 1313-2, clause 6.
- Further processed sections: To BS EN 1313-2, clause NA3.

Dimensions on drawings: Finished sizes.

### Preservative treated wood

Cutting and machining: Completed as far as possible before treatment.

Extensively processed treated timber: Re-treat timber sawn along length, ploughed, thickened, planed or otherwise extensively worked.

Surfaces exposed by minor cutting and drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

### Moisture content

Wood and wood based boards: Maintained within specified range during manufacture and storage.

### Finishing

Joinery finish: Smooth, flat surfaces suitable to receive finishes.

Arrises: Eased.

End grain of external components: Before assembly, sealed with primer or sealer and allowed to dry.

# Z11 PURPOSE MADE METALWORK

## GENERAL

### Cross-reference

General: Read with A90 General technical requirements.

## PRODUCTS

### Coatings and coated products

To iron and steel:

- Vitreous enamelled carbon steel and cast iron building components: To BS EN 14431.
- Sherardized coatings on carbon steel and cast iron: To BS 4921.
- Powder organic coatings to galvanized steel for external architectural purposes: To BS 6497 or BS EN 13438.
- Zinc electrodeposited coatings with supplementary treatment on iron or steel: To BS EN 12329.
- Cadmium electrodeposited coatings on iron or steel: To BS EN 12330.
- Nickel, nickel/ chromium, copper/ nickel and copper/ nickel/ chromium electrodeposited coatings: To BS EN 12540 (also applicable to zinc alloys, copper and copper alloys).
- Hot dip galvanized coatings on fabricated iron and steel: To BS EN ISO 1461.

To aluminium and aluminium alloys:

- Anodic oxidation coatings on wrought aluminium for external architectural applications: To BS 3987.
- Liquid organic coatings to aluminium alloy for external architectural purposes: To BS 4842.
- Powder organic coatings to aluminium alloy for external architectural purposes: To BS 6496.
- Welding:

General guidance for arc welding: To BS EN 1011-1.

Arc welding of ferritic steels: To BS EN 1011-2.

### Materials generally

Prefinished metal: Do not damage or alter appearance of finish.

Fasteners: To appropriate British Standard and, unless specified otherwise, of same metal as component, with matching coating or finish.

## EXECUTION

### Fabrication generally

Contact between dissimilar metals in components that are to be fixed where moisture may be present or occur: Avoid. Finished components: Rigid and free from distortion, cracks, burrs and sharp arrises.

- Moving parts: Free moving without binding.
- Corner junctions of identical sections: Mitred unless specified otherwise.

### Cold formed work

Profiles: Accurate with straight arrises.

### Welding/ Brazing generally

Surfaces to be joined: Thoroughly cleaned.

Tack welds: Use only for temporary attachment.

Joints: Made with parent and filler metal fully bonded throughout with no inclusions, holes, porosity or cracks.

Surfaces of materials that will be self-finished and visible in completed work: Protect from weld spatter.

Traces of flux residue, slag and weld spatter: Removed.

### Welding of steel

Preferred method: Metal arc welding.

- Alternative methods: Submit proposals.

### Finishing welded/ brazed joints visible in completed work

Butt joints: Smooth and flush with adjacent surfaces.

Fillet joints: Neatly executed and ground smooth where specified.

### Preparation for application of coatings

General: Fabrication complete, and fixing holes drilled before applying coatings.

Paint, grease, flux, rust, burrs and sharp arrises: Removed.

### Galvanizing

Vent and drain holes: Provide in approved locations and submit proposals for sealing after galvanizing.

### Powder coating

Applicator requirements:

- Approved by the powder coating manufacturer.
- Currently certified to BS EN ISO 9901.

## Anodizing

Processor requirements:

- Approved by the Aluminium Finishing Association.
- Currently certified to BS EN ISO 9901.



## Z12 PRESERVATIVE AND FIRE RETARDANT TREATMENT

### GENERAL

#### Cross-reference

General: Read with A90 General technical requirements.

### EXECUTION

#### Treatment application

Timing: After cutting and machining timber, and before assembling components.

Processor: Licensed by manufacturer of specified treatment solution.

Certification: For each batch of timber provide a certificate of assurance that treatment has been carried out as specified.

#### WPA Commodity Specifications

Standard: Wood Protection Association (WPA) publications 'Industrial flame retardant treatment of solid timber and panel products' and 'Industrial wood preservation specification and practice'.

Solution strengths and treatment cycles: Select to achieve specified service life and to suit timber treatability.

#### Copper-organic preservative treatment

Type: Copper azole (CuAz), alkaline copper quaternary (ACQ) or equivalent.

Application: High pressure impregnation.

Moisture content of wood at time of treatment (maximum): 28%.

Condition of treated timber before use: Dry.

#### Water-based organic preservative treatment

Application: Vacuum pressure process.

Colour: Colourless.

Usage: Unsuitable for use in ground or seawater contact.

Incorporation of treated timber into the Works: Timber is wet immediately after treatment and must be stored at the treatment plant until in a condition ready for transporting.

#### Copper chromium arsenic (CCA) preservative treatment

Usage: European legislation restricts new treatment. Submit proposals if use of recycled timber treated with CCA is intended. Copper chromium based preservative treatment (other than CCA).

Type: Chromated copper (CC), copper chromium phosphate (CCP), copper chromium borate (CCB) or equivalent.

Application: High pressure impregnation.

Moisture content of wood at time of treatment (maximum): 28%. After treatment, allow timber to dry before using.

Condition of treated timber before use: Dry and at moisture content specified elsewhere.

Incorporation of treated timber into the Works: Do not use for minimum 14 days after treatment.

#### Organic solvent preservative treatment

Colour: Colourless.

Usage: Do not use near animals, plants or foodstuffs, or in association with bituminous/ coal tar based materials.

Application: Double vacuum + low pressure impregnation, or immersion.

Moisture content of wood at time of treatment: As specified for the component at time of fixing.

Condition of treated timber before use: Surface dry.

#### Water based microemulsion preservative treatment

Application: Double vacuum + low pressure impregnation.

Moisture content of wood at time of treatment: As specified for the component at time of fixing.

Condition of treated timber before use: Surface dry.

#### Boron compound preservative treatment

Usage: Do not use in timber subject to continual wetting.

Application: High pressure impregnation.

Moisture content of wood at time of treatment (maximum): 28%.

Condition of treated timber before use: Dry.

#### Fire retardant treatment

Application: Vacuum + pressure impregnation.

Moisture content of wood at time of treatment: As specified for the timber/ component at time of fixing.

Condition of treated timber before use: Redried slowly at temperatures not exceeding 65°C to minimize degradation and distortion.

#### Leach resistant fire retardant treatment

Application: Vacuum + pressure impregnation.

Moisture content of wood at time of treatment: As specified for the timber/ component at time of fixing.

## Z20 FIXINGS AND ADHESIVES

### GENERAL

#### Cross-reference

General: Read with A90 General technical requirements.

#### Definitions

In this section the following definitions are used:

- Fixing: The act of securing an object to another object or background, e.g. Fix A to B with screws at 200 mm centres.
- Fixings: Systems that fix objects together, composite connection items comprising, e.g. nuts, bolts, washers, spacers, cover caps.
- Fasteners: Components that fix objects together, e.g. screws, nails.

### PRODUCTS

#### Fasteners generally

Materials: To have bimetallic corrosion resistance and atmospheric corrosion resistance appropriate to fixing location.

Appearance: Submit samples on request.

#### Packings

Material: Noncompressible, corrosion resistant, rot proof.

Area of packings: Sufficient to transfer loads.

#### Masonry fixings

Light duty: Plugs and screws.

Heavy duty: Expansion anchors or chemical anchors.

#### Pelleted countersunk fixings

Pellets: Cut from matching timber, grain matched.

#### Plugs

Type: Proprietary types to suit substrate, loads to be supported and conditions expected in use.

#### Adhesives generally

Standards:

- Hot-setting phenolic and aminoplastic: To BS 1203.
- Thermosetting wood adhesives: To BS EN 12765.
- Polyvinyl acetate thermoplastic adhesive: To BS 4071.

#### Pelleted countersunk fixings

Pellets: Cut from matching timber, grain matched.

#### Powder actuated fixing systems

Types of fastener, accessories and consumables: As recommended by tool manufacturer.

Tools: To BS 4078-2, Kitemark certified.

Operatives: Trained and certified as competent by tool manufacturer.

### EXECUTION

#### Fixing generally

Types, sizes and quantities of fasteners/ packings and spacings of fixings: Selected to retain supported components without distortion and loss of support.

Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.

Components, substrates, fixings and fasteners of dissimilar metals: Isolate with plastics washers/ sleeves to avoid bimetallic corrosion.

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

Appearance: Fixings to be in straight lines at regular centres.

#### Fixing packings

Function: To take up tolerances and prevent distortion of materials/ components.

Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.

Locations: Not within zones to be filled with sealant.

#### Fixing cramps

Cramp positions: 150 mm (maximum) from each end of frame sections and at 600 mm (maximum) centres.

Fasteners: Fix cramps to frames with screws of same material as cramps.

Fixings in masonry work: Fully bedded in mortar.

#### Pelleted countersunk fixings

Finished level of countersunk screw heads: 6 mm (minimum) below timber surface.

Pellets: Cut from matching timber, match grain and glue in to full depth of hole.

Finished level of pellets: Flush with surface.

**Plugged countersunk screw fixing**

Finished level of countersunk screw heads: 6 mm (minimum) below timber surface.

Plugs: Glue in to full depth of hole.

Finished level of plugs: Projecting above surface.

**Powder actuated fixing systems**

Powder actuated fixing tools, method of use: To BS 4078-1.

Operatives: Trained and certified as competent by tool manufacturer.

**Applying adhesives**

Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.

Support and clamping during setting: Provide as necessary. Do not mark surfaces or distort components being fixed.

Finished adhesive joints: Fully bonded. Free of surplus adhesive.

## Z21 MORTARS

### GENERAL

#### Cross-reference

General: read with A90 General technical requirements.

### PRODUCTS

#### Admixtures for site made cement gauged and hydraulic lime:sand masonry mortars

Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.  
Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

#### Cements for mortar

Cement: To BS EN 197-1 and CE marked.

- Type: Portland cement, CEM I. Portland limestone cement, CEM III/A-L or CEM III/A-LL. Portland slag cement, CEM II/B-S, Portland fly ash cement, CEM II/B.

- Strength class: 32.5, 42.5 or 52.5.

White cement: To BS EN 197-1 and CE marked.

- Type: Portland cement, CEM I.

- Strength class: 52.5.

Sulfate resisting Portland cement.

- Type: To BS EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked. To BS EN 197-1 fly ash cement, CEM II/B-V and CE marked.

- Strength class: 32.5, 42.5 or 52.5.

Masonry cement: To BS EN 413-1 and CE marked, class MC 12.5.

#### Lime:sand for cement gauged masonry mortars

Ready mixed:

- Standard: To BS EN 998-2.

- Lime: Nonhydraulic to BS EN 459-1, type CL 90S.

- Pigments for coloured mortar: To BS EN 12878.

Site made:

- Permitted use: Where a special colour is not required and in lieu of factory made ready-mixed material.

- Lime: Nonhydraulic to BS EN 459-1, type: CL 90S.

- Mixing: Thoroughly mix lime with sand, in the dry state. Add water and mix again. Allow to stand, without drying out, for at least 16 hours before using.

#### Retarded ready to use cement gauged masonry mortars

Standard: To BS EN 998-2.

Lime for cement:lime:sand mortars: Nonhydraulic to BS EN 459-1.

- Type: CL 90S.

Pigments for coloured mortars: To BS EN 12878.

Time and temperature limitations: Use within limits prescribed by mortar manufacturer.

- Retempering: Restore workability with water only within prescribed time limits.

#### Sand for lime:sand masonry mortars

Type: Sharp, well graded.

- Quality, sampling and testing: To BS EN 13139.

#### Sand for site made cement gauged masonry mortars

Standard: To BS EN 13139.

- Grading: 0/2 (FP or MP). Fines content where the proportion of sand in a mortar mix is specified as a range (e.g. 1:1: 5 – 6): Lower proportion of sand, use category 3 fines. Higher proportion of sand, use category 2 fines.

Sand for facework mortar: Maintain consistent colour and texture. Obtain from one source.

### EXECUTION

#### Making cement gauged mortars

Batching: By volume. Use clean and accurate gauge boxes or buckets.

- Mix proportions: Based on dry sand. Allow for bulking of damp sand.

Mixing: Mix materials thoroughly to uniform consistency, free from lumps.

- Mortars containing air entraining admixtures: Mix mechanically. Do not overmix.

Working time (maximum): Two hours at normal temperatures.

Contamination: Prevent intermixing with other materials.

**Ready prepared lime putty**

Type: Slaked directly from CL 90 quicklime to BS EN 459-1, using an excess of water.

- Maturation: In pits/ containers that allow excess water to drain away.
- Density of matured lime putty: 1.3–1.4 kg/L.

Maturation period before use (minimum): 30 days after slaking.

**Making lime:sand mortars**

Batching: By volume. Use clean and accurate gauge boxes or buckets.

Mixing: Mix materials thoroughly to uniform consistency, free from lumps.

- Site prepared nonhydraulic lime:sand mortars: Use roller pan mixer. Mix materials thoroughly by compressing, beating and chopping. Do not add water. Maturation period before use (maximum) 7 days.
- Site prepared hydrated hydraulic lime:sand: Follow the lime manufacturer's recommendations for each stage of the mix. Water quantity, only sufficient to produce a workable mix. Working time, within limits recommended by the hydraulic lime manufacturer.

Contamination: Prevent intermixing with other materials, including cement.

**Ready to use nonhydraulic lime:sand mortars**

Type: Select from:

- Lime putty slaked directly from quicklime to BS EN 459-1 and mixed thoroughly with sand.
- Quicklime to BS EN 459-1 slaked directly with sand.

Maturation period before use (maximum): 7 days.

## Z22 SEALANTS

### GENERAL

#### Cross-reference

General: Read with A90 General technical requirements.

### PRODUCTS

#### Joints

Design: To BS 6093.

#### Sealants

Classification and requirements: To BS EN ISO 11600.

#### Non-cellular gaskets

Standard: To BS 4255-1.

#### Components

Backing strips, bond breakers, primers: Types recommended by sealant manufacturer.

### EXECUTION

#### Suitability of joints

Presealing checks:

- Joint dimensions: Within limits specified for the sealant.
- Substrate quality: Surfaces regular, undamaged and stable.

Joints not fit to receive sealant: Submit proposals for rectification.

#### Preparing joints

Surfaces to which sealant must adhere:

- Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
- Clean using materials and methods recommended by sealant manufacturer.

Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.

Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

- Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.

Protection: Keep joints clean and protect from damage until sealant is applied.

#### Applying sealants

Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.

Environmental conditions: Mix and apply primers and sealants within temperature and humidity ranges recommended by manufacturers. Do not dry or raise temperature of joints by heating.

Sealant application: Unless specified otherwise, fill joints completely and neatly, ensuring firm adhesion to substrates.

Sealant profiles:

- Butt and lap joints: Slightly concave.
- Fillet joints: Flat or slightly convex.

Protection: Protect finished joints from contamination or damage until sealant has cured.

**St Philips Church and Community Centre Prelims  
And Schedule of Works**

20 Jul 2015

CANTERBURY DIOCESAN ADVISORY COMMITTEE	
See Notification	DAC/2015/196
<i>Tim Deem</i>	Secretary
20/8/15	Date

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## A10 PROJECT PARTICULARS

£

### 110 The Project

Name:

St Philip's Church

Nature:

Alterations to Accommodate Disabled Facilities, Partial Rewire & Repairs to Ceilings

Location:

St Philip's Church, Waterloo Street, Maidstone ME15 7UH

Length of contract:

Contractor to advise on programme as part of tender submission.

### 120 Employer (Client)

Name:

St Philip's Church Centre Trust

Address:

St Philip's Church, Waterloo Street, Maidstone ME15 7UH

Telephone:

### 140 Architect (herein referred to as 'CA')

Name:

Lee Evans Partnership LLP

Address:

St John's Lane, Canterbury, Kent. CT1 2QQ

Telephone:

01227 784444

### 150 Planning Supervisor/ CDM Coordinator

Name:

Lee Evans CDM

Address:

Lee Court, 26a Castle Street, Canterbury, Kent. CT1 2PU

Telephone:

01227 473530

## A11 TENDER AND CONTRACT DOCUMENTS

### 110 Tender drawings

The tender drawings are:

Architects Drawings :6917 WD 00, 01, 02, 03, 04, 05, 10, 11, 12, 13, 14, 15 & 16.

### 120 Contract drawings

The Contract Drawings: The same as the tender drawings.

### 160 Pre-tender Health and Safety Plan/ Preconstruction information

Format: The Pre-tender Health and Safety Plan/ Preconstruction information is included in these preliminaries in Section A34. It refers to information given elsewhere in the preliminaries, schedules and drawings.

Total for page £

To be carried forward to General Summary (page 26)

## A12 THE SITE/ EXISTING BUILDINGS

£

- 110 The site**  
Description:  
St. Philip's can be found one mile South from Maidstone Town Centre along Stone Street, by turning left into Waterloo Street. It is signposted from Lower Stone Street.
- 120 Existing buildings on/ adjacent to the site**  
Description:  
St Philip's Church is in a residential area, it is bounded on the north sides by Waterloo Street with Basing Close to the east.
- 140 Existing mains and services**  
Drawings:  
Information shown is indicative only: The Electric cupboard is identified on the drawings. Hot and cold water, and heating services are generally run surface mounted and will be identifiable at the Contractors site inspection prior to tendering.  
Other information:  
Electrical Inspection Report attached to these documents
- 180 Health and safety file**  
Availability for inspection: The Health and Safety File for the site/ building may be seen by appointment during normal office hours at: Lee Evans CDM Ltd, Canterbury.  
Document attached  
Other documents:  
N/A  
Arrangements for inspection:  
N/A
- 200 Access to the site**  
Description:  
Please refer to attached site plan 6917 WD 00. Vehicles to edge of site only for unloading.  
Limitations:  
Only designated contractors entrances are to be used for access. There is no direct vehicle access to the building, all materials to be moved by hand or trolley between church building and Waterloo Street.
- 210 Parking**  
Restrictions on parking of the Contractor's and employees' vehicles:  
Limited parking is available in the small church car park, due consideration is to be given if parking on street in front of residents homes.
- 220 Use of the site**  
General: Do not use the site for any purpose other than carrying out the Works.  
Limitations:  
Main contractor and operatives should be aware that the church is a place of worship as well as a place of burial. Attire and use of language should be appropriate.
- 230 Surrounding land/ building uses**  
General: Adjacent or nearby uses or activities are as follows:  
St Philip's Church is in a predominantly residential area, it is bounded on the north sides by Waterloo Street with Basing Close to the east.

Total for page £

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**240 Health and safety hazards**

General: The Client is undertaking an Asbestos Type 3 Survey concurrent with this tender. Potentially there are Asbestolux and Artex/Coating products that may contain Asbestos, these will be removed prior to the successful Contractor starting on site. The contractor is to allow for a minimum four week lead-in period prior to his start on site during which any asbestaas will be removed. The nature and condition of the site/ building cannot be fully and certainly ascertained before it is opened up. However the following hazards are or may be present:

Parts of the existing electrical services are not up to current standards.

Information: The accuracy and sufficiency of this information is not guaranteed by the Employer or the Employer's representative. Ascertain if any additional information is required to ensure the safety of all persons and the Works.

Site staff: Draw to the attention of all personnel working on the site the nature of any possible contamination and the need to take appropriate precautionary measures.

**250 Site visit**

Before tendering: Ascertain the nature of the site, access thereto and all local conditions and restrictions likely to affect the execution of the Works.

Arrangements for visit:

To be made through the CA.

**A13 DESCRIPTION OF THE WORK****120 The works**

Description:

Internal alterations to accommodate disabled facilities, partial rewire & repairs to ceilings.

**A20 JCT MINOR WORKS BUILDING CONTRACT (MW)****JCT MINOR WORKS BUILDING CONTRACT**

The Contract: JCT Minor Works Building Contract, Revision 1 2011.

Requirement: Allow for the obligations, liabilities and services described therein against the headings following:

**THE RECITALS****First The Works and the Contract Administrator**

The work comprises:

Internal alterations to accommodate disabled facilities, partial rewire to WC area & repairs to ceilings.

Architect/ Contract Administrator: See clause A10/140.

**Second Contract documents**

Contract drawings: As listed in clause A11/120.

Contract documents: The following have not been prepared and will be deleted from this recital:

The work schedules

**Third Priced documents**

The references to

Work Schedules & Schedule of Rates will be deleted.

**THE ARTICLES**

Total for page £

To be carried forward to General Summary (page 26)

**3 Architect/ Contract Administrator**

Architect/ Contract Administrator: See clause A10/140.

**6 Adjudication**

Amendments:

None

**CONTRACT PARTICULARS****Fourth Recital and clause 4.2 Construction industry scheme (CIS)**

Employer at the Base Date  
is not a 'contractor' for the purposes of the CIS.

**Fifth Recital CDM Regulations (please see adendum regarding the CDM Regulations 2015)**

The project  
is notifiable.

**Article 7 Arbitration**

Article 7 and Schedule 1  
will apply.

**Clause 1.1 CDM planning period**

Shall mean the period of  
2 weeks ending on  
the date of possession

**Clause 2.2 Commencement and Completion**

Date for Commencement of the Works:

The contractor to advise when able to commence on site when submitting his  
tender

Date for Completion:

The contractor to advise when submitting his tender how many weeks he  
requires to complete the works. This is to be agreed with Employer prior to  
commencement.

**Clause 2.8 Liquidated damages**

At the rate of:  
£500 per  
calendar week or pro-rata thereto

**Clause 2.10 Rectification period**

Period:  
Six months

**Clause 4.3 Percentage of the total value of the work etc.**

Percentage:  
95 per cent

**Clause 4.5 Percentage of the total amount to be paid to the Contractor**

Percentage:  
97½ per cent

**Clause 4.8.1 Supply of documentation**

Period:  
Six months

**Clause 4.11 and Schedule 2 Contribution, levy and tax changes**

Clause 4.11 will be deleted.

Total for page £

To be carried forward to General Summary (page 26)

**Clause 5.3.2 Contractor's insurance - injury to persons or property**

Insurance cover (for any one occurrence or series of occurrences arising out of one event):

Not less than £2,000,000

**Clauses 5.4A, 5.4B and 5.4C Insurance of the works etc - alternative provisions**

Clause

5.4C (Existing structures insurance by Employer in own name) applies.

**Clauses 5.4A.1 and 5.4B.1.2 Percentage to cover professional fees**

Addition:

20 per cent.

**Clause 7.2 Adjudication**

The Adjudicator is:

Not named

Nominator of Adjudicator: President or a Vice president or Chairman or Vice Chairman of the:

Royal Institute of British Architects

**Schedule 1 and Schedule 2 Base date**

Base date:

1 November 2008

**Schedule 1 paragraph 2.1 Arbitration**

Appointor of Arbitrator (and of any replacement): President or a Vice president of the:

Royal Institute of British Architects

**THE CONDITIONS****Section 1: Definitions and Interpretation****Section 2: Carrying out the Works****Section 3: Control of the Works****Section 4: Payment****Section 5: Injury, Damage and Insurance****Section 6: Termination****Section 7: Settlement of Disputes****EXECUTION**

The Contract: Will be executed under hand

**A30 TENDERING/ SUBLETTING/ SUPPLY****110 Scope**

General: These conditions are supplementary to those stated in the Invitation to Tender and on the form of tender.

Total for page £

To be carried forward to General Summary (page 26)

- 145 Tendering procedure**  
 General: In accordance with the principles of the Construction Industry Board 'Code of practice for the selection of main contractors'.  
 Arithmetical errors:  
 Overall price is dominant.
- 160 Exclusions**  
 Inability to tender: Immediately inform if any parts of the work as defined in the tender documents cannot be tendered.  
 Relevant parts of the work: Define those parts, stating reasons for the inability to tender.
- 170 Acceptance of tender**  
 The Employer and Employer's representatives:  
 - Offer no guarantee that any tender will be recommended for acceptance or be accepted.  
 - Will not be responsible for any cost incurred in the preparation of any tender.
- 190 Period of validity**  
 Period: After submission or lodgement, keep tender open for consideration (unless previously withdrawn) for not less than 12 weeks  
 Date for possession/ commencement: See section A20.
- PRICING/ SUBMISSION OF DOCUMENTS**
- 210 Preliminaries in the specification**  
 The Preliminaries/ General conditions sections (A10-A56 inclusive) must not be relied on as complying with SMM7.
- 250 Priced schedules of work**  
 Alterations: Do not alter or qualify the priced schedules of work without written consent. Tenders containing unauthorised alterations or qualifications may be rejected.  
 Measurements: Where not stated, ascertain from the drawings.  
 Deemed included: Costs relating to items, which are not priced, will be deemed to have been included elsewhere in the tender.  
 Submit:  
 with tender
- 310 Tender**  
 General: Tenders must include for all work shown or described in the tender documents as a whole or clearly apparent as being necessary for the complete and proper execution of the Works.
- 530 Substitute products**  
 Details: If products of different manufacture to those specified are proposed, submit details with the tender giving reasons for each proposed substitution. Substitutions, which have not been notified at tender stage, may not be considered.  
 Compliance: Substitutions accepted will be subject to the verification requirements of clause A31/200.

Total for page £

To be carried forward to General Summary (page 26)

**550 Health and safety information**

Content: Describe the organisation and resources to safeguard the health and safety of operatives, including those of subcontractors, and of any person whom the Works may affect.

Include:

- A copy of the contractor's health and safety policy document, including risk assessment procedures.
- Accident and sickness records for the past five years.
- Records of previous Health and Safety Executive enforcement action.
- Records of training and training policy.
- The number and type of staff responsible for health and safety on this project with details of their qualifications and duties.

Submit:

Within one week of request

**570 Outline construction phase health and safety plan**

Content: Submit the following information within one week of request:

- Method statements on how risks from hazards identified in the pre-tender health and safety plan and other hazards identified by the contractor will be addressed.
- Details of the management structure and responsibilities.
- Arrangements for issuing health and safety directions.
- Procedures for informing other contractors and employees of health and safety hazards.
- Selection procedures for ensuring competency of other contractors, the self-employed and designers.
- Procedures for communications between the project team, other contractors and site operatives.
- Arrangements for cooperation and coordination between contractors.
- Procedures for carrying out risk assessment and for managing and controlling the risk.
- Emergency procedures including those for fire prevention and escape.
- Arrangements for ensuring that all accidents, illness and dangerous occurrences are recorded.
- Arrangements for welfare facilities.
- Procedures for ensuring that all persons on site have received relevant health and safety information and training.
- Arrangements for consulting with and taking the views of people on site.
- Arrangements for preparing site rules and drawing them to the attention of those affected and ensuring their compliance.
- Monitoring procedures to ensure compliance with site rules, selection and management procedures, health and safety standards and statutory requirements.
- Review procedures to obtain feedback.

**SUBLETTING/ SUPPLY****630 Domestic subcontracts**

General: Comply with the Construction Industry Board 'Code of Practice for the selection of subcontractors'.

**A31 PROVISION, CONTENT AND USE OF DOCUMENTS****DEFINITIONS AND INTERPRETATIONS**

Total for page £

To be carried forward to General Summary (page 26)



- 110 Definitions**  
 Meaning: Terms, derived terms and synonyms used in the preliminaries/ general conditions and specification are as stated therein or in the appropriate British Standard or British Standard glossary.
- 120 Communication**  
 Definition: Includes advise, inform, submit, give notice, instruct, agree, confirm, seek or obtain information, consent or instructions, or make arrangements.  
 Format: In writing to the person named in clause A10/140 unless specified otherwise.  
 Response: Do not proceed until response has been received.
- 130 Products**  
 Definition: Materials, both manufactured and naturally occurring, and goods, including components, equipment and accessories, intended for the permanent incorporation in the Works.  
 Includes: Goods, plant, materials, site materials and things for incorporation into the Works.
- 135 Site equipment**  
 Definition: All appliances or things of whatsoever nature required in or about the construction for completion of the Works but not materials or other things intended to form or forming part of the Permanent Works.  
 Includes: Construction appliances, vehicles, consumables, tools, temporary works, scaffolding, cabins and other site facilities.
- 160 Terms used in specification**  
 Remove: Disconnect, dismantle as necessary and take out the designated products or work and associated accessories, fixings, supports, linings and bedding materials. Dispose of unwanted materials. Excludes taking out and disposing of associated pipework, wiring, ductwork or other services.  
 Fix: Unload, handle, store, place and fasten in position including all labours and use of site equipment.  
 Supply and fix: Includes all labour and site equipment for unloading, handling, storing and execution. All products to be supplied and fixed unless stated otherwise.  
 Keep for reuse: Do not damage designated products or work. Clean off bedding and jointing materials. Stack neatly, adequately protect and store until required by the Employer or for use in the Works as instructed.  
 Make good: Execute local remedial work to designated work. Make secure, sound and neat. Excludes redecoration and/ or replacement.  
 Replace: Supply and fix new products matching those removed. Execute work to match original new state of that removed.  
 Repair: Execute remedial work to designated products. Make secure, sound and neat. Excludes redecoration and/ or replacement.  
 Refix: Fix removed products.  
 Ease: Adjust moving parts of designated products or work to achieve free movement and good fit in open and closed positions.  
 Match existing: Provide products and work of the same appearance and features as the original, excluding ageing and weathering. Make joints between existing and new work as inconspicuous as possible.  
 System: Equipment, accessories, controls, supports and ancillary items, including installation, necessary for that section of the work to function.

Total for page £

To be carried forward to General Summary (page 26)



- 170 Manufacturer and product reference**  
 Definition: When used in this combination:  
 - Manufacturer: The firm under whose name the particular product is marketed.  
 - Product reference: The proprietary brand name and/ or reference by which the particular product is identified.  
 Currency: References are to the particular product as specified in the manufacturer's technical literature current on the date of the invitation to tender.
- 200 Substitution of products**  
 Products: If an alternative product to that specified is proposed, obtain approval before ordering the product.  
 Reasons: Submit reasons for the proposed substitution.  
 Documentation: Submit relevant information, including:  
 - manufacturer and product reference;  
 - cost;  
 - availability;  
 - relevant standards;  
 - performance;  
 - function;  
 - compatibility of accessories;  
 - proposed revisions to drawings and specification;  
 - compatibility with adjacent work;  
 - appearance;  
 - copy of warranty/ guarantee.  
 Alterations to adjacent work: If needed, advise scope, nature and cost.  
 Manufacturers' guarantees: If substitution is accepted, submit before ordering products.
- 210 Cross references**  
 Accuracy: Check remainder of the annotation or item description against the terminology used in the section or clause referred to.  
 Related terminology: Where a numerical cross-reference is not given the relevant sections and clauses of the specification will apply.  
 Relevant clauses: Clauses in the referred to specification section dealing with general matters, ancillary products and execution also apply.  
 Discrepancy or ambiguity: Before proceeding, obtain clarification or instructions.
- 220 Referenced documents**  
 Conflicts: Specification prevails over referenced documents.
- 250 Currency of documents**  
 Currency: References to published documents are to the editions, including amendments and revisions, current on the date of the Invitation to Tender.
- 260 Sizes**  
 General dimensions: Products are specified by their co-ordinating sizes.  
 Timber: Cross section dimensions shown on drawings are:  
 - Target sizes as defined in BS EN 336 for structural softwood and hardwood sections.  
 - Finished sizes for non-structural softwood or hardwood sawn and further processed sections.

**DOCUMENTS PROVIDED ON BEHALF OF THE EMPLOYER**

Total for page £

To be carried forward to General Summary (page 26)

- |  |   |   |
|--|---|---|
| 410  | <b>Additional copies of drawings/ documents</b><br>Additional copies: Issued free of charge.  | £ |
| 440  | <b>Dimensions</b><br>Scaled dimensions: Do not rely on.   |   |
| 460  | <b>The specification</b><br>Coordination: All sections must be read in conjunction with Main Contract Preliminaries/ General conditions.  |   |
| <b>DOCUMENTS PROVIDED BY CONTRACTOR/ SUBCONTRACTORS/ SUPPLIERS</b> |   |   |
| 630  | <b>Technical literature</b><br>Information: Keep on site for reference by all supervisory personnel:<br>- Manufacturers' current literature relating to all products to be used in the Works.<br>- Relevant British, EN or ISO Standards.   |   |
| 640  | <b>Maintenance instructions and guarantees</b><br>Components and equipment: Obtain or retain copies, register with manufacturer and hand over on or before completion of the Works.<br>Information location:<br>Building Manual<br>Emergency call out services: Provide telephone numbers for use after completion. Extent of cover:<br>N/A |   |

## **A32 MANAGEMENT OF THE WORKS**

### **GENERALLY**

- |     |   |  |
|-----|---|--|
| 100 | <b>Works within the Church Environment</b><br>The contractor is to respect the fact that he is working in a Church, he is to ensure that his workforce is respectful of this and of the building. The contractor may need to stop work for up to six Funerals or Services during the works. When this occurs the times will be arranged so the contractors can coordinate lunch breaks etc during the Service.  |  |
| 110 | <b>Supervision</b><br>General: Accept responsibility for coordination, supervision and administration of the Works, including subcontracts.<br>Coordination: Arrange and monitor a programme with each subcontractor, supplier, local authority and statutory undertaker, and obtain and supply information as necessary for coordination of the work.  |  |
| 115 | <b>Considerate constructors scheme</b><br>Registration: Before starting work, register the site and pay the appropriate fee:<br>Contact:<br>- Address: Considerate Constructors Scheme Office, PO Box 75, Great Amwell, Ware, Hertfordshire, SG12 9UY.<br>- Tel. 01920 485959.<br>- Fax. 01920 485958.<br>- Web. <a href="http://www.ccscheme.org.uk">www.ccscheme.org.uk</a><br>- E mail. <a href="mailto:enquiries@ccscheme.org.uk">enquiries@ccscheme.org.uk</a><br>Standard: Comply with the Scheme's Code of Considerate Practice. |  |

Total for page £

To be carried forward to General Summary (page 26)

- 120 Insurance**  
Documentary evidence: Before starting work on site submit details, and/ or policies and receipts for the insurances required by the Conditions of Contract. Insurance of the building in joint names taken out by the church.
- 130 Insurance claims**  
Notice: If any event occurs which may give rise to any claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the Works, immediately give notice to the Employer, the person named in clause A10/140 and the Insurers.  
Failure to notify: Indemnify the Employer against any loss, which may be caused by failure to give such notice.
- 140 Climatic conditions**  
Information: Record accurately and retain:  
- Daily maximum and minimum air temperatures (including overnight).  
- Delays due to adverse weather, including description of the weather, types of work affected and number of hours lost.
- 150 Ownership**  
Alteration/ clearance work: Materials arising become the property of the Contractor except where otherwise stated. Remove from site as work proceeds. Any leadwork / flashings removed are to remain the property of the client, give credit in final account for the salvaged lead supported by receipts.
- 210 Programme**  
Master programme: Immediately when requested and before starting work on site submit in an approved form a master programme for the Works, which must include details of:  
- Planning and mobilisation by the Contractor  
- Subcontractor's work.  
- Running in, adjustment, commissioning and testing of all engineering services and installations.  
- Work resulting from instructions issued in regard to the expenditure of provisional sums.  
- Work by others concurrent with the Contract.  
Submit  
one copy
- 245 Start of work on site**  
Notice: Before the proposed date for start of work on site give minimum notice of  
one week
- 250 Monitoring**  
Progress: Record on a copy of the programme kept on site.  
Avoiding delays: If any circumstances arise which may affect the progress of the Works submit proposals or take other action as appropriate to minimize any delay and to recover any lost time.

**Total for page £**

To be carried forward to General Summary (page 26)

- 260 Site meetings**  
 General: Site meetings will be held to review progress and other matters arising from administration of the Contract.  
 Frequency:  
 Every month  
 Location:  
 St Phillips Church, Maidstone  
 Accommodation: Ensure availability at the time of such meetings.  
 Attendees: Attend meetings and inform subcontractors and suppliers when their presence is required.  
 Chairperson (who will also take and distribute minutes):  
 Contract Administrator
- 310 Extensions of time**  
 Notice: When a notice of the cause of any delay or likely delay in the progress of the works is given under the contract, written notice must also be given of all other causes which apply concurrently.  
 Details: As soon as possible submit:  
 - Relevant particulars of the expected effects, if appropriate, related to the concurrent causes.  
 - An estimate of the extent, if any, of the expected delay in the completion of the Works beyond the date for completion.  
 - All other relevant information required.
- 420 Removal/ replacement of existing work**  
 Extent and location: Agree before commencement.  
 Execution: Carry out in ways that minimize the extent of work.
- 430 Proposed instructions**  
 Estimates: If a proposed instruction requests an estimate of cost, submit without delay and in any case within seven days.
- 440 Measurement**  
 Covered work: Give notice before covering work required to be measured.
- 450 Daywork vouchers**  
 Before commencing work: Give reasonable notice to person countersigning daywork vouchers.  
 Content: Before delivery each voucher must be:  
 - Referenced to the instruction under which the work is authorised.  
 - Signed by the Contractor's person in charge as evidence that the operatives' names, the time daily spent by each and the equipment and products employed are correct.  
 Submit: By the end of the week in which the work has been executed.
- 460 Interim valuations**  
 Applications: Include details of amounts due under the Contract together with all necessary supporting information.  
 Submission: At least seven days before established dates.
- 470 Products not incorporated into the Works**  
 Ownership: At the time of each valuation, supply details of those products not incorporated into the Works which are subject to any reservation of title inconsistent with passing of property as required by the Conditions of Contract, together with their respective values.  
 Evidence: When requested, provide evidence of freedom of reservation of title.

Total for page £

To be carried forward to General Summary (page 26)

## **A33 QUALITY STANDARDS/ CONTROL**

£

### **STANDARDS OF PRODUCTS AND EXECUTIONS**

#### **110 Incomplete documentation**

General: Where and to the extent that products or work are not fully documented, they are to be:

- Of a kind and standard appropriate to the nature and character of that part of the Works where they will be used.
- Suitable for the purposes stated or reasonably to be inferred from the project documents.

Contract documents: Omissions or errors in description and/ or quantity shall not vitiate the Contract nor release the Contractor from any obligations or liabilities under the Contract.

#### **120 Workmanship skills**

Operatives: Appropriately skilled and experienced for the type and quality of work.

Registration: With Construction Skills Certification Scheme.

Evidence: Operatives must produce evidence of skills/ qualifications when requested.

#### **130 Quality of products**

Generally: New. (Proposals for recycled products may be considered).

Supply of each product: From the same source or manufacturer.

Whole quantity of each product required to complete the Works: Consistent kind, size, quality and overall appearance.

Tolerances: Where critical, measure a sufficient quantity to determine compliance.

Deterioration: Prevent. Order in suitable quantities to a programme and use in appropriate sequence.

#### **135 Quality of execution**

Generally: Fix, apply, install or lay products securely, accurately, plumb, neatly and in alignment.

Colour batching: Do not use different colour batches where they can be seen together.

Dimensions: Check on-site dimensions.

Finished work: Without defects, e.g. not damaged, disfigured, dirty, faulty, or out of tolerance.

Location and fixing of products: Adjust joints open to view so they are even and regular.

#### **140 Compliance**

Compliance with proprietary specifications: Retain on site evidence that the proprietary product specified has been supplied.

Compliance with performance specifications: Submit evidence of compliance, including test reports indicating:

- Properties tested.
- Pass/ fail criteria.
- Test methods and procedures.
- Test results.
- Identity of testing agency.
- Test dates and times.
- Identities of witnesses.
- Analysis of results.

**Total for page £**

To be carried forward to General Summary (page 26)

- 150 Inspections**  
 Products and executions: Inspection or any other action must not be taken as approval unless confirmed in writing referring to:  
 - Date of inspection.  
 - Part of the work inspected.  
 - Respects or characteristics which are approved.  
 - Extent and purpose of the approval.  
 - Any associated conditions.
- 160 Related work**  
 Details: Provide all trades with necessary details of related types of work. Before starting each new type or section of work ensure previous related work is:  
 - Appropriately complete.  
 - In accordance with the project documents.  
 - To a suitable standard.  
 - In a suitable condition to receive the new work.  
 Preparatory work: Ensure all necessary preparatory work has been carried out.
- 170 Manufacturer's recommendations/ instructions**  
 General: Comply with manufacturer's printed recommendations and instructions current on the date of the Invitation to tender.  
 Changes to recommendations or instructions: Submit details.  
 Ancillary products and accessories: Use those supplied or recommended by main product manufacturer.  
 Agrément certified products: Comply with limitations, recommendations and requirements of relevant valid certificates.
- 180 Water for the works**  
 Mains supply: Clean and uncontaminated.  
 Other: Do not use until:  
 - Evidence of suitability is provided.  
 - Tested to BS EN 1008 if instructed.
- 210 Samples**  
 Products or executions: Comply with all other specification requirements and in respect of the stated or implied characteristics either:  
 - To an express approval.  
 - To match a sample expressly approved as a standard for the purpose.
- 230 Approval of execution**  
 Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.  
 Approval: Relates to the stated characteristics of the sample. (If approval of the finished work as a whole is required this is specified separately). Do not conceal, or proceed with affected work until compliance with requirements is confirmed.  
 Complying sample: Retain in good, clean condition on site. Remove when no longer required.
- 330 Appearance and fit**  
 Tolerances and dimensions: If likely to be critical to execution or difficult to achieve, as early as possible either:  
 - Submit proposals; or  
 - Arrange for inspection of appearance of relevant aspects of partially finished work.  
 General tolerances (maximum): To BS 5606, tables 1 and 2.

Total for page £

To be carried forward to General Summary (page 26)

- 525 Access**  
 Extent: Provide at all reasonable times access to the Works and to other places of the Contractor or subcontractors where work is being prepared for the Contract.  
 Designate:  
 Contract Administrator & Project Manager
- 530 Overtime working**  
 Notice: Prior to overtime being worked, submit details of times, types and locations of work to be done.  
 - Minimum period of notice:  
 One day  
 Concealed work: If executed during overtime for which notice has not been given, it may be required to be opened up for inspection and reinstated at the Contractor's expense.
- 540 Defects in existing work**  
 Undocumented defects: When discovered, immediately give notice. Do not proceed with affected related work until response has been received.  
 Documented remedial work: Do not execute work which may:  
 - Hinder access to defective products or work; or  
 - Be rendered abortive by remedial work.
- 610 Defective products/ executions**  
 Proposals: Immediately any work or product is known, or appears, to be not in accordance with the Contract, submit proposals for opening up, inspection, testing, making good, adjustment of the Contract Sum, or removal and re-execution.  
 Acceptability: Such proposals may be unacceptable and contrary instructions may be issued.
- 710 Work before completion**  
 General: Make good all damage consequent upon the Works.  
 Temporary markings, coverings and protective wrappings: Remove unless otherwise instructed.  
 Cleaning: Clean the Works thoroughly inside and out, including all accessible ducts and voids. Remove all splashes, deposits, efflorescence, rubbish and surplus materials.  
 Cleaning materials and methods: As recommended by manufacturers of products being cleaned, and must not damage or disfigure other materials or construction.  
 COSHH dated data sheets: Obtain for all materials used for cleaning and ensure they are used only as recommended by their manufacturers.  
 Minor faults: Touch up in newly painted work, carefully matching colour and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions.  
 Moving parts of new work: Adjust, ease and lubricate as necessary to ensure easy and efficient operation, including doors, windows, drawers, ironmongery, appliances, valves and controls.
- 720 Security at completion**  
 General: Leave the Works secure with, where appropriate, all accesses closed and locked.

Total for page £

To be carried forward to General Summary (page 26)



01/11/17

£

**730 Making good defects**  
 Remedial work: Arrange access with Project Manager  
 Rectification: Give reasonable notice for access to the various parts of the Works.  
 Completion: Notify when remedial works have been completed.

**A34 SECURITY/ SAFETY/ PROTECTION**

**110 Pretender health and safety plan/ Preconstruction information**  
 Location: Integral with the project Preliminaries, including but not restricted to the following sections:  
 - Description of project: Sections A10 and A11.  
 - Client's consideration and management requirements: Sections A12, A13 and A36.  
 - Environmental restrictions and on-site risks: Section A12, A35 and A34.  
 - Significant design and construction hazards: Section A34.  
 - The Health and Safety File: Section A37.

**140 Construction phase health and safety plan**  
 Submission: Present to the Employer/ Client no later than Not later than two weeks before commencement of the work on site.  
 Confirmation: Do not start construction work until the Employer has confirmed in writing that the Construction Phase Health and Safety Plan includes the procedures and arrangements required by the CDM Regulations.  
 Content: Develop the plan from and draw on the Outline Construction Phase Health and Safety Plan, clause A30/570, and the Pre-tender Health and Safety Plan/ Preconstruction information.

**150 Security**  
 Protection: Safeguard the site, the Works, products, materials, and existing buildings affected by the Works from damage and theft.  
 Access: Take all reasonable precautions to prevent unauthorized access to the site, the Works and adjoining property.  
 Special requirements:  
 Keep the site secure whilst the graveyard and parts of the Church are in use

**160 Stability**  
 Responsibility: Maintain the stability and structural integrity of the Works during the Contract.  
 Design loads: Obtain details, support as necessary and prevent overloading.

**170 Occupied premises**  
 Extent: Existing buildings will be occupied and/ or used during the Contract as follows:  
 The Church, Hall, Hall kitchen, Meeting room and Entrance lobby. First floor Meeting room and Coffee Bar.  
 Works: Carry out without undue inconvenience and nuisance and without danger to occupants and users.  
 Overtime: If compliance with this clause requires certain operations to be carried out during overtime, and such overtime is not required for any other reason, the extra cost will be paid to the Contractor, provided that such overtime is authorized in advance.

**Total for page £**

To be carried forward to General Summary (page 26)



- 210 Employer's representatives site visits**  
 Safety: Submit details in advance, to the Employer or the person identified in clause A10/140, of safety provisions and procedures (including those relating to materials, which may be deleterious), which will require their compliance when visiting the site.  
 Protective clothing and/ or equipment: Provide and maintain on site for the Employer and the person stated in clause A10/140 and other visitors to the site.
- 330 Noise control**  
 Standard: Comply generally with the recommendations of BS 5228-1, clause 9.3 to minimize noise levels during the execution of the Works.  
 Noise levels from the Works: Maximum level:  
 70dB dB(A) when measured from  
 The site boundary except between the hours of 9.00am to 5.00pm Monday to Friday  
 Equipment: Fit compressors, percussion tools and vehicles with effective silencers of a type recommended by manufacturers of the compressors, tools or vehicles.  
 Restrictions: Do not use:  
 - Pneumatic drills and other noisy appliances without consent during the hours of  
 Outside the hours detailed above  
 - Radios or other audio equipment or permit employees to use in ways or at times that may cause nuisance.
- 340 Pollution**  
 Prevention: Protect the site, the Works and the general environment including streams and waterways against pollution.  
 Contamination: If pollution occurs inform immediately, including to the appropriate Authorities and provide relevant information.
- 350 Pesticides**  
 Use: Not permitted.
- 360 Nuisance**  
 Duty: Prevent nuisance from smoke, dust, rubbish, vermin and other causes.  
 Surface water: Prevent hazardous build-up on site, in excavations and to surrounding areas and roads.
- 370 Asbestos containing materials**  
 Duty: Report immediately any suspected materials discovered during execution of the Works.  
 - Do not disturb.  
 - Agree methods for safe removal or encapsulation.
- 375 Antiquities**  
 Duty: Report immediately any fossils, antiquities and other objects of interest or value discovered during execution of the works.  
 Preservation: Keep objects in the exact position and condition in which they were found.  
 Special requirements:  
 \_\_\_\_\_

Total for page £

To be carried forward to General Summary (page 26)

- 380 Fire prevention**  
 Duty: Prevent personal injury or death, and damage to the Works or other property from fire.  
 Standard: Comply with Joint Code of Practice 'Fire Prevention on Construction Sites', published by the Construction Confederation and The Fire Protection Association (The 'Joint Fire Code').
- 390 Smoking on site**  
 Smoking on site: Not permitted.
- 400 Burning on site**  
 Burning on site: Not permitted.
- 410 Moisture**  
 Wetness or dampness: Prevent, where this may cause damage to the Works.  
 Drying out: Control humidity and the application of heat to prevent:  
 - Blistering and failure of adhesion.  
 - Damage due to trapped moisture.  
 - Excessive movement.
- 420 Infected timber**  
 Removal: Where instructed to remove timber affected by fungal/ insect attack from the building, minimize the risk of infecting other parts of the building.
- 430 Waste**  
 Includes: Rubbish, debris, spoil, containers and surplus material.  
 Minimize: Keep the site and Works clean and tidy.  
 Remove: Frequently and dispose off site in a safe and competent manner:  
 - Non-hazardous material: In a manner approved by the Waste Regulation Authority.  
 - Hazardous material: As directed by the Waste Regulation Authority and in accordance with relevant regulations.  
 Voids and cavities in the construction: Remove rubbish, dirt and residues before closing in.  
 Waste transfer documentation: Retain on site.
- 560 Existing features**  
 Protection: Prevent damage to existing buildings, fences, gates, walls, roads, paved areas and other site features, which are to remain in position during execution of the Works.  
 Special requirements:  
 No unauthorised access is permitted outside the site compound and anything outside this area is not to be damaged.

### **A35 SPECIFIC LIMITATIONS ON METHOD/ SEQUENCE/ TIMING**

- 170 Working hours**  
 Specific limitations:  
 8.00am to 5.30pm Monday to Friday - No Saturday working unless by prior agreement.

### **A36 FACILITIES/ TEMPORARY WORK/ SERVICES GENERALLY**

Total for page £

To be carried forward to General Summary (page 26)

- 230 Temporary accommodation**  
Proposals for temporary accommodation and storage for the Works: Submit two weeks prior to the Commencement Date.  
Details to be included: Type of accommodation/WCs and storage, its siting and the programme for site installation and removal.
- 235 Temporary WC accommodation for Church & Church Centre use**  
Proposals for temporary WC accommodation for Church & Church Centre use only, allow for Male, Female and Disabled (contractors WC accommodation is to be allowed for in Clause A36/230 : Submit two weeks prior to the Commencement Date.  
Details to be included: Details of disabled access to WCs, its siting (if different to architects proposals and the programme for site installation and removal.
- 340 Name boards/ advertisements**  
General: Obtain approval, including statutory consents, and provide a temporary name board displaying:  
- Title of project:  
Internal Alterations to Accommodate Disabled Facilities.  
- Name of Employer:  
TBC  
- Names of Consultants:  
N/A  
- Names of Contractor and Subcontractors:  
TBC  
- Special requirements:  
TBC
- 410 Lighting**  
Finishing work and inspection: Provide temporary lighting, the intensity and direction of which closely resembles that delivered by the permanent installation.
- 420 Lighting and power**  
Supply: Electricity from the Employer's mains may be used for the Works as follows:  
- Metering:  
Free of charge  
- Point of supply:  
On Site  
- Available capacity:  
T.B.C Tenderers are to inspect available supply at time of their site visit and raise any deficiencies with the CA.  
- Frequency: 50 Hz.  
- Phase:  
single phase 240 volt  
- Current: Alternating.  
Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.

Total for page £

To be carried forward to General Summary (page 26)

- 430 Water**  
 Supply: The Employer's mains may be used for the Works as follows:  
 - Metering:  
 Free of charge  
 - Source:  
 On site  
 - Location of supply point:  
 T.B.A  
 - Conditions/ Restrictions:  
 To be used responsibly  
 Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.

- 440 Telephones**  
 Direct communication: As soon as practicable after the Date of Possession provide the Contractor's person in charge with a mobile telephone.

### **A37 OPERATION/ MAINTENANCE OF THE FINISHED BUILDING**

- 120 The health and safety file**  
 Purpose: To provide information about the structure or materials used, which might affect the health or safety of anyone if construction works, (including cleaning, maintenance, alterations, refurbishment and demolition) are carried out.  
 Contractor designed and performance specified work: Obtain or prepare details of construction methods and materials, general maintenance instructions and as-built drawings.  
 Other information: Obtain or prepare details of utilities and services, materials hazards, access requirements/restrictions and maintenance and decommissioning instructions.  
 Number of copies: Submit two copies to the principle designer.  
 Latest date for submission: one weeks before the date for completion stated in the contract.

### **A40 CONTRACTOR'S GENERAL COST ITEMS: MANAGEMENT AND STAFF**

- 110 Management and staff**  
 Cost significant items:  
 cost of agent per week.

### **A41 CONTRACTOR'S GENERAL COST ITEMS: SITE ACCOMMODATION**

- 110 Site accommodation**  
 Details: Site accommodation required or made/ not made available by the Employer: See section A36.  
 Cost significant items:  
 Temporary accommodation and storage for the Works.

**Total for page £**

To be carried forward to General Summary (page 26)

## **A42 CONTRACTOR'S GENERAL COST ITEMS: SERVICES AND FACILITIES**

- 110 Services and facilities**  
 Details: Services or facilities required or made/ not made available by the Employer: See section A36.  
 Cost significant items:  
 All items required by the contractor to carry out the works as specified in a safe manner.

## **A43 CONTRACTOR'S GENERAL COST ITEMS: MECHANICAL PLANT**

- 110 Mechanical plant**  
 Cost significant items:  
 All items required by the contractor to carry out the works as specified in a safe manner.

## **A44 CONTRACTOR'S GENERAL COST ITEMS: TEMPORARY WORKS**

- 110 Temporary works**  
 Details: Temporary works required or made/ not made available by the Employer: See section A36.  
 Cost significant items:  
 All items required by the contractor to carry out the works as specified in a safe manner.

## **A50 WORK/ PRODUCTS BY/ ON BEHALF OF THE EMPLOYER**

- 120 Products provided by/ on behalf of employer**  
 General: Details of such products are given in the work sections, for fixing by the Contractor. Use for no other purpose than the Works.  
 Handling: Accept delivery, check against receipts and take into appropriate storage.  
 Surplus products: Keep safe and obtain instructions.

## **A54 PROVISIONAL WORK/ ITEMS**

- 210 Provisional sums for undefined work**  
 Item:  
 As detailed in specification  
 Description of work:  
 As detailed in specification  
 Provisional Sums: Include  
 As detailed in specification  
 Allow for general attendance.
- 590 Contingencies**  
 Provisional sum: Include:  
 Nil

Total for page £

To be carried forward to General Summary (page 26)

## A55 DAYWORKS

£

### 150 Daywork Charges

General: Where an instruction is issued requiring a variation which is not of a similar character or executed under similar conditions to work included in the Contract and where work cannot properly be measured and valued, the Contractor shall be allowed payment on a daywork basis at the following rates:

RICS/ Building Employers' Confederation: Prime cost of labour: The sum of £

\_\_\_\_\_  
- Percentage adjustment to cover incidental costs, overheads and profit:  
\_\_\_\_\_%.

Prime cost of materials and goods: The sum of £

\_\_\_\_\_  
- Percentage adjustment to cover incidental costs, overheads and profit:  
\_\_\_\_\_%.

Prime cost of plant: The sum of £

\_\_\_\_\_  
- Percentage adjustment to cover incidental costs, overheads and profit:  
\_\_\_\_\_%.

RICS/ Electrical Contractors' Association: Prime cost of labour: The sum of £

\_\_\_\_\_  
- Percentage adjustment to cover incidental costs, overheads and profit:  
\_\_\_\_\_%.

Prime cost of materials and goods: The sum of £

\_\_\_\_\_  
- Percentage adjustment to cover incidental costs, overheads and profit:  
\_\_\_\_\_%.

Prime cost of plant: The sum of £

\_\_\_\_\_  
- Percentage adjustment to cover incidental costs, overheads and profit:  
\_\_\_\_\_%.

RICS/ Electrical Contractors' Association of Scotland: Prime cost of labour:  
The sum of £

\_\_\_\_\_  
- Percentage adjustment to cover incidental costs, overheads and profit:  
\_\_\_\_\_%.

Prime cost of materials and goods: The sum of £

\_\_\_\_\_  
- Percentage adjustment to cover incidental costs, overheads and profit:  
\_\_\_\_\_%.

Prime cost of plant: The sum of £

\_\_\_\_\_  
- Percentage adjustment to cover incidental costs, overheads and profit:  
\_\_\_\_\_%.

RICS/ Heating and Ventilating Contractors' Association: Prime cost of labour:  
The sum of £

\_\_\_\_\_  
- Percentage adjustment to cover incidental costs, overheads and profit:  
\_\_\_\_\_%.

Prime cost of materials and goods: The sum of £

\_\_\_\_\_  
- Percentage adjustment to cover incidental costs, overheads and profit:  
\_\_\_\_\_%.

Prime cost of plant: The sum of £

\_\_\_\_\_

Total for page £

To be carried forward to General Summary (page 26)

- Percentage adjustment to cover incidental costs, overheads and profit: _____%. <b>St Philips Church and Community Centre Prelims And Schedule of Works</b> RICS/ National Association of Plumbing, Heating and Mechanical Services contractors: Prime cost of labour: The Sum of £	£
- Percentage adjustment to cover incidental costs, overheads and profit: _____%. Prime cost of materials and goods: The Sum of £	
- Percentage adjustment to cover incidental costs, overheads and profit: _____%. Prime cost of plant: The Sum of £	£
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St Philips Church and Community Centre Prelims And Schedule of Works

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Signed \_\_\_\_\_  
For and on behalf of \_\_\_\_\_  
Date \_\_\_\_\_



**St Philips Church and Community Centre Schedule  
of works - Schedule of Work**

21 Jul 2015

CANTERBURY DIOCESAN ADVISORY COMMITTEE	
See Notification	DAC/2015/96
<i>Tu Dall</i>	Secretary
20/8/15	Date

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## 0 DEMOLITION, SITE CLEARANCE AND ALTERATIONS

£

### 0.1 Demolition

#### 10 Survey Before Demolition

Drawing Reference : 6917 WD 01 & 6917 WD 12

#### 20 Remove Sanitary Fittings

Drawing Reference : 6917 WD 01 & 6917 WD 12

Location : Male and Female WCs

- **Removing Existing Male and Female WC Suites**

Extent : All fittings and associated pipework.

Disposal : Remove from site.

#### 30 Remove Radiators

Drawing Reference : 6917 WD 01 & 6917 WD 12

Location : Male and Female WCs

- **Removing Heat Emitter**

Type : Steel panel radiator.

Quantity : All in Male and Female WCs

Disposal : Isolate and remove from site for recycling.

- **Removing Water Pipework For Heating System**

Type : 6917 WD 01 & 6917 WD 12.

Quantity : All in Male and Female WCs

Preparation : Isolate and disconnect.

Disposal : Remove from site for recycling.

#### 40 Remove Existing Wiring

Drawing Reference : 6917 WD 01 & 6917 WD 12

Location : Male and Female WCs

- **Removing Electric Cables (V90)**

Extent : Cable, conduit/trunking and all associated boxes and plates.

Location : Individual circuits.

Disposal : Remove.

#### 50 Remove Internal Foul Drainage Pipework System

Drawing Reference : 6917 WD 01 & 6917 WD 12

Location : Male and Female WCs

- **Removing Internal Drainage Stacks And Branches**

Type : As drawings 6917 WD 01 & 6917 WD 12

Extent : All in Male and Female WCs

: Allow for removal of concrete bedding and surround to pipework.

Disposal : Remove from site.

- **Removing Internal Waste Pipework**

Type : As drawings 6917 WD 01 & 6917 WD 12

Extent : All in Male and Female WCs

Disposal : Remove from site.

#### 60 Remove Existing Floor Tiles / Floor Finishes

Drawing Reference : As floor finishes drawings 6917 WD 15

Location : Ground floor as drawing

- **Removing Floor Tiles**

Type : Lino, PVC / Marley type floor tiles.

Extent : As drawing 6917 WD 15.

Disposal : Remove from site.

- **Preparation Of Existing Substrate (M50)**

Existing Substrate : Remove all of the old asphalt bedding, adhesive, existing bitumen residues, remove all of the underlayment and all other contaminants in order to expose the original concrete / sand/cement screed subfloor. Remove all traces of dust and debris.

Existing Substrate : Prepare as Reference Specification M50.

Total for page £

To be carried forward to Section 0 collection (page 4)

**70 Remove Concrete Block Internal Walls**

Location : *As drawings 6917 WD 01 & 6917 WD 12.*

• **Removing Concrete Block Solid Walling**

Thickness : *As drawing 6917 WD 12.*

Extent : *As drawing 6917 WD 12.*

Preparation : *Cut plaster/ render back to neat lines to both sides of wall below blockwork to be removed.*

Disposal : *Remove from site for recycling.*

**80 Remove Plasterboard Ceiling**

Drawing Reference : *As drawings 6917 WD 01 & 6917 WD 12.*

Location : *To area to receive extract duct as shown on drawings.*

• **Removing Plasterboard**

Extent : *As drawings.*

Disposal : *Remove from site.*

£

**Total for Section 0 £**

To be carried forward to Tender Summary (page 27)

## 1 SUBSTRUCTURE

£

### 1.1 Walls Below Ground

#### 90 Ashlar External Wall Below Ground

Drawing Reference : 6917 WD 12  
Location : External walls to WC area

- Alterations to Natural Stone Ashlar Walling And Features To Form Openings For **New Drain Runs**

Type : Existing natural stone walls.

Location : To form openings for new drain runs to lines as drawing 6917 WD 12 .

Extent : As drawings.

Disposal Method : Select sufficient stone for reuse in the works. Remove remainder from site.

- **Proprietary RC Lintel To Masonry Walling Over New Drain Runs (F30)**

Manufacturer : Contractor's choice.

Product Reference : Contractor to advise.

Type : Reinforced Precast concrete.

Size : To extend 150 mm each side of opening.

Bedding : As adjacent masonry.

**Total for Section 1 £**

To be carried forward to Tender Summary (page 27)

## 2 SUPERSTRUCTURE

£

### 2.1 Internal Walls and Partitions

#### 100 Concrete Block Internal Solid Wall Above Dpc

Drawing Reference : 6917 WD 12  
Location : Ground floor WC area and Hall

- Concrete Common Block Internal Solid Wall Above Dpc (F10)

Block Manufacturer : Contractor's choice.  
Product Reference : Contractor to advise.  
Type : Common block, solid.  
Density : Lightweight aggregate block.  
Work Size : 440 x 215 x 100 mm.  
Minimum Compressive Strength : 7 N/mm<sup>2</sup>.  
Wall Thickness : As drawing 6917 WD 12.  
Bond : Half lap stretcher.  
Mortar Mix : 1:1:6 cement:lime:sand.  
Joint Profile : Flush.

- Flexible Sheet Damp Proof Course (F30)

Manufacturer : Contractor's choice.  
Product Reference : Contractor to advise  
Type : Contractor's choice.  
Width : Full width of leaf, together with specified projection.  
Joints : 100 mm minimum laps.  
Outer Edge : N/A.

#### 110 Erect New Steel Beam To Opening

Drawing Reference : 6917 WD 12  
Location : Ground floor Disabled WC G04 and adjacent Male WC G05, as line shown on drawings.

- Erect New Steel Beam To Opening

Type : UB  
Size : 178 x 102 x 19  
Pad stones : Cut standard RC lintel (75x100mm wide) to 450mm lengths.  
: Provisional details; Engineer to confirm.

Total for Section 2 £

To be carried forward to Tender Summary (page 27)

### 3 Internal Doors

#### 120 Internal Wood Flush Door And Frame

Drawing Reference : 6917 WD 12 Doors D02, D03 & D04. (D01 existing door)  
Location : Ground floor

- **Internal Wood Fire Resisting Flush Doorset (L20)**

Manufacturer : *Contractor's choice.*  
Product Reference : *Contractor to advise.*  
Door Leaf : *Single leaf.*  
Fire Resistance : *Non Fire door.*  
Doorset Size : *900 x 2100 mm, door D02 1000x2100 mm.*  
Facings : *Paint grade plywood.*  
Frame : *Wood, species to match door facing.*  
Glazing : *Factory glazed, Georgian wired glazing.*  
Handing : *As drawing.*  
Finish As Delivered : *Factory applied primer and undercoat for site finishing.*  
Ironmongery : *To match adjacent ironmongery, Contractor to submit samples for approval prior to order.*  
Fixing : *As manufacturer's recommendations.*  
Frame Gap Filling : *As manufacturer's recommendations.*

- **Internal Wood Flush Door Leaf (L20)**

Manufacturer : *Contractor's choice.*  
Product Reference : *Single leaf.*  
Type : *Single flush door leaf.*  
Size : *To suit structural openings shown on plans.*  
Facings : *Paint grade plywood.*  
Glazing : *None.*  
Finish As Delivered : *Factory applied primer and undercoat for site finishing.*

- **Internal Softwood Door Frame (L20)**

Manufacturer : *As door manufacturer.*  
Product Reference : *Single leaf.*  
Type : *Internal softwood door lining with loose stops.*  
Overall Size : *To suit structural openings shown on plans*  
Wood Species : *Manufacturer's standard.*  
Finish As Delivered : *Factory applied primer and undercoat for site finishing.*  
Fixing : *As manufacturer's recommendations.*

- **Single Axis Door Hinges (P21)**

Manufacturer : *Contractor's choice.*  
Type : *Double washered butt.*  
Material And Finish : *Bright zinc plated steel.*  
Size : *Contractor's choice.*  
Grade : *Contractor's choice.*  
Number Per Leaf : *Three.*  
Position : *Centreline of top and bottom hinges 250 mm from top and bottom door edges with third hinge 200 mm below top hinge.*

- **Door Latch (P21)**

Manufacturer : *Contractor's choice.*  
Type : *Contractor's choice.*  
Latch Bolt Type : *Brass, two way action for light knobs or sprung lever handles.*  
Backset : *57 mm.*  
Rebate Set : *Not required.*

- **Lever Handles (P21)**

Manufacturer : *Contractor's choice, to match adjacent ironmongery.*  
Product Reference : *Contractor to advise.*  
Type : *With return to door.*  
Size : *Manufacturer's standard.*  
Mounting : *Sprung plate with screw fixing.*  
Material And Finish : *To match adjacent ironmongery, Contractor to submit samples for approval prior to order.*

- **Gloss Painting System Internal (M60)**

Manufacturer : *Contractor's choice.*  
Product Range Reference : *Contractor to advise.*  
Preparation : *Prepare surfaces for decoration.*  
Initial Coats : *One coat water based primer/ undercoat, white.*  
Finishing Coats : *Two coats acrylic gloss.*  
Finish Colour : *T.B.A.*

Total for page £

To be carried forward to Section 3 collection (page 9)

**130 Internal Wood Flush Door And Frame**

Drawing Reference : 6917 WD 12 Door D05.  
Location : Ground floor

- **Internal Wood Fire Resisting Flush Doorset (L20)**

Manufacturer : *Contractor's choice.*  
Product Reference : *1/2 Hour Fire resisting.*  
Door Leaf : *Single leaf with glazed apertures John Carr G05 type.*  
Fire Resistance : *FD 30S (2).*  
Doorset Size : *900 x 2100 mm.*  
Facings : *Paint grade plywood.*  
Frame : *Wood, species to match door facing.*  
Glazing : *Factory glazed, Georgian wired glazing.*  
Handing : *As drawing.*  
Finish As Delivered : *Factory applied primer and undercoat for site finishing.*  
Ironmongery : *To match adjacent ironmongery, Contractor to submit samples for approval prior to order.*  
Fixing : *As manufacturer's recommendations.*  
Frame Gap Filling : *As manufacturer's recommendations.*

- **Internal Wood Flush Door Leaf (L20)**

Manufacturer : *Contractor's choice.*  
Product Reference : *Single leaf.*  
Type : *flush door leaf.*  
Size : *To suit structural openings shown on plans.*  
Facings : *Paint grade plywood.*  
Glazing : *None.*  
Finish As Delivered : *Factory applied primer and undercoat for site finishing.*

- **Internal Softwood Door Frame (L20)**

Manufacturer : *As door manufacturer.*  
Product Reference : *Single leaf.*  
Type : *Internal softwood door lining with loose stops.*  
Overall Size : *To suit structural openings shown on plans*  
Wood Species : *Manufacturer's standard.*  
Finish As Delivered : *Factory applied primer and undercoat for site finishing.*  
Fixing : *As manufacturer's recommendations.*

- **Single Axis Door Hinges (P21)**

Manufacturer : *Contractor's choice.*  
Type : *Double washered butt.*  
Material And Finish : *Bright zinc plated steel.*  
Size : *Contractor's choice.*  
Grade : *Contractor's choice.*  
Number Per Leaf : *Three.*  
Position : *Centreline of top and bottom hinges 250 mm from top and bottom door edges with third hinge 200 mm below top hinge.*

- **Door Latch (P21)**

Manufacturer : *Contractor's choice.*  
Type : *Contractor's choice.*  
Latch Bolt Type : *Brass, two way action for light knobs or sprung lever handles.*  
Backset : *57 mm.*  
Rebate Set : *Not required.*

- **Lever Handles (P21)**

Manufacturer : *Contractor's choice, to match adjacent ironmongery.*  
Product Reference : *Contractor to advise.*  
Type : *With return to door.*  
Size : *Manufacturer's standard.*  
Mounting : *Sprung plate with screw fixing.*  
Material And Finish : *To match adjacent ironmongery, Contractor to submit samples for approval prior to order.*

- **Self Closer (overhead) (P21)**

Manufacturer : *Contractor's choice, to match ironmongery.*  
Product Reference : *Contractor to advise.*  
Type : *Adjustable Part M compliant.*  
Size : *Manufacturer's standard.*  
Material And Finish : *To match adjacent ironmongery, Contractor to submit samples for approval prior to order.*

Total for page £

To be carried forward to Section 3 collection (page 9)



• **Gloss Painting System Internal (M60)**

Manufacturer : *Contractor's choice.*  
Product Range Reference : *Contractor to advise.*  
Preparation : *Prepare surfaces for decoration.*  
Initial Coats : *One coat water based primer/ undercoat, white.*  
Finishing Coats : *Two coats acrylic gloss.*  
Finish Colour : *T.B.A.*

£

**140 Internal Wood Flush Door And Frame**

Drawing Reference : *6917 WD 12 D06 & D07.*  
Location : *Ground floor*

• **Internal Wood Flush Door Leaf (L20)**

Manufacturer : *Contractor's choice.*  
Product Reference : *Double leaf to suit structural openings shown on plans.*  
Type : *Equal pair flush door leaves Half hour fire resistance.*  
Size : *To suit structural openings shown on plans.*  
Facings : *Paint grade plywood.*  
Glazing : *None.*  
Finish As Delivered : *Factory applied primer and undercoat for site finishing.*

• **Internal Softwood Door Frame (L20)**

Manufacturer : *As door manufacturer.*  
Product Reference : *Double leaf.*  
Type : *Internal softwood door lining with loose stops.*  
Overall Size : *to suit structural openings shown on plans.*  
Wood Species : *Manufacturer's standard.*  
Finish As Delivered : *Factory applied primer and undercoat for site finishing.*  
Fixing : *As manufacturer's recommendations.*

• **Single Axis Door Hinges (P21)**

Manufacturer : *Contractor's choice.*  
Type : *Double washered butt.*  
Material And Finish : *Bright zinc plated steel.*  
Size : *Contractor's choice.*  
Grade : *Contractor's choice.*  
Number Per Leaf : *Three.*  
Position : *Centreline of top and bottom hinges 250 mm from top and bottom door edges with third hinge 200 mm below top hinge.*

• **Door Lock (P21)**

Manufacturer : *Contractor's choice.*  
Product Reference : *Contractor to advise.*  
Type : *Type to match existing cupboards.*  
Backset : *Contractor's choice.*  
Rebate Set : *Not required.*

• **Bolts on secondary leaf (P21)**

Manufacturer : *Contractor's choice.*  
Type : *Contractor's choice.*  
Size : *Contractor's choice.*  
Mounting : *Surface fixed.*  
Material And Finish : *Contractor's choice.*

• **Gloss Painting System Internal (M60)**

Manufacturer : *Contractor's choice.*  
Product Range Reference : *Contractor to advise.*  
Preparation : *Prepare surfaces for decoration.*  
Initial Coats : *One coat water based primer/ undercoat, white.*  
Finishing Coats : *Two coats acrylic gloss.*  
Finish Colour : *T.B.A.*

**Total for Section 3 £**

To be carried forward to Tender Summary (page 27)

## 4 FINISHES

£

### 4.1 Wall Finishes

#### 150 Two Coat Lightweight Gypsum Plaster To Masonry Wall

Drawing Reference : *As drawing 6917 WD 12*

Location : *Ground floor WC area and cupboard to Hall*

- **M20a Two Coat Lightweight Gypsum Plaster (M20A)**

Manufacturer : *Contractor's choice.*

Undercoat : *Lightweight gypsum browning plaster.*

Undercoat Thickness : *11 mm.*

Final Coat : *Gypsum finish plaster.*

Final Coat Thickness : *2-3 mm.*

Final Coat Finish : *Smooth.*

- **M20a Beads And Stops For Plaster (M20A)**

Manufacturer : *Contractor's choice.*

Beads And Stops : *Stainless steel.*

Position : *All external angles and stop ends.*

- **Preparation For Painting New Plaster (M60)**

Method : *Remove all loose or otherwise defective material including nibs, trowel marks and splashes.*

Finishing : *Fill all surface defects with plaster or other suitable filler and abrade to a smooth surface.*

- **Emulsion Paint (M60)**

Manufacturer : *Contractor's choice.*

Type : *Vinyl matt emulsion.*

Application : *Contractor's choice.*

Number Of Coats : *Sealing coat and two full coats*

Colour : *T.B.A.*

#### 160 Ceramic Tiling Adhesive Bedded On Intermediate Substrate To Internal Wall

Drawing Reference: *6917 WD 13 & 14.*

Location: *Male, Female and Disabled WC areas.*

- **Preparing Wall For Tiling (M40)**

Initial Preparation: *Contractor's choice.*

Final Preparation: *Apply bonding agent.*

- **Intermediate Substrate For Tiling To Internal Walls (M40)**

Manufacturer: *Contractor's choice.*

Product Reference: *Contractor to advise.*

Type: *Contractor's choice.*

Thickness: *Manufacturer's standard.*

Fixing: *Contractor's choice.*

Joint Treatment: *As recommended by manufacturer.*

- **Ceramic Tiling On Adhesive Bed To Internal Wall (M40)**

Manufacturer : *Contractor's choice.*

Product Reference: *Contractor to advise.*

Type: *Ceramic tiles, water absorption 3% or less.*

Size: *150 x 150 mm.*

Thickness: *6.5-7 mm.*

Finish: *Glazed.*

Colour: *To be agreed, contractor to allow for two colours in each area.*

Bedding: *As recommended by manufacturer to suit background.*

Joint Width: *2 mm.*

- **Sealant Movement Joint To Internal Wall Tiling (M40)**

Manufacturer: *Contractor's choice.*

Product Reference: *Contractor to advise.*

Type: *Type A low modulus silicone.*

Colour: *White.*

Backing Material: *Contractor's choice.*

Bond Breaker Tape: *As recommended by sealant manufacturer.*

Joint Width: *6 mm.*

Position: *At internal comers.*

Total for page £

To be carried forward to Section 4 collection (page 12)

- **Grouting To Wall Tiling (M40)**  
 Manufacturer: *Contractor's choice.*  
 Product Reference: *Contractor to advise.*  
 Type: *Flexible polymer modified water and frost resistant cement base grout.*  
 Colour: *Pigmented - colour to be agreed.*  
 Joint Profile: *To approval.*

## 170 Decorations

- Drawing Reference : *As drawing 6917 WD 12 & 16.*  
 Location : *Ground floor WC areas G04, G05 & G06, WC corridor G08, cupboards G03, G08 & G09, existing kitchen door and door D01.*
- **Preparation For Redecorating Previously Painted Plaster (M60)**  
 Method : *Remove all loose or otherwise defective material including nibs and splashes. Wash down with warm detergent solution and abrade to remove all deposits.*  
 Finishing : *Fill all surface defects with plaster or other suitable filler and abrade to a smooth surface.*
  - **Emulsion Paint (M60)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Vinyl matt emulsion.*  
 Application : *Roller.*  
 Number Of Coats : *Sealing coat and two full coats.*  
 Colour : *T.B.A.*
  - **Preparation For Redecorating Previously Painted Wood (M60)**  
 Method : *Contractor's choice. Make good to provide sound substrate.*  
 Finishing : *Fill all surface defects and abrade to a smooth even surface. Apply two coats of knotting to exposed resinous areas and knots.*
  - **Interior Undercoat (M60)**  
 Manufacturer : *Contractor's choice.*  
 Type : *Water based.*  
 Application : *As manufacturer's recommendations.*  
 Number Of Coats : *As manufacturer's recommendations.*  
 Colour : *As manufacturer's recommendations for finish coat colour.*
  - **Gloss Paint (M60)**  
 Manufacturer : *Contractor's choice.*  
 Type : *Water based acrylic gloss.*  
 Application : *As manufacturer's recommendations.*  
 Number Of Coats : *Three.*  
 Colour : *T.B.A.*

## 4.2 Floor Finishes

### 180 Vinyl Sheet Flooring On Existing Concrete Substrate

- Drawing Reference : *As drawing 6917 WD 15*  
 Location : *Ground floor WC areas G04, G05 & G06.*
- **Preparation Of Existing Substrate (M50)**  
 Existing Substrate : *Prepare as Reference Specification M50 Remove all old asphalt, adhesive, underlayment and all other contaminants in order to expose the original concrete/sand/cement screed. Remove all traces of dust and debris.*
  - **Liquid Applied Damp proof Membrane For Flexible Floor Sheeting (M50)**  
 Manufacturer : *Tremco Illbruck Ltd.*  
 Product Reference : *Treadfast One Coat Universal DPM.*  
 Application : *Apply Treadfast One Coat Universal damp proof membrane by means of a 2 mm x 5 mm notched trowel. While the Treadfast One Coat Universal is still wet, flatten out the serration ridges with a long handled roller, initially pre-wetted in Treadfast One Coat Universal to a thickness of not less than 350 microns or 250 microns (up to 92%RH) . Allow it to dry approximately 8 to 10 hours as per the manufacturer's recommendations (For full details telephone Tremco Limited 01753 691696).*
  - **Liquid Applied Primer (M50)**  
 Manufacturer : *Tremco Illbruck Ltd.*  
 Product Reference : *Treadfast Epoxyprime.*  
 Application : *Prime the cured Treadfast One Coat Universal damp proof membrane with Treadfast Epoxyprime primer and allow it to dry as per the instructions. (For full details telephone Tremco Limited 01753 691696).*

Total for page £

To be carried forward to Section 4 collection (page 12)

• **Smoothing Underlayment For Flexible Floor Sheeting (M50)**

Manufacturer : *Tremco Illbruck Ltd.*  
Product Reference : *Treadfast Unismooth.*  
Application : *Apply Treadfast Unismooth self-levelling Underlayment to a thickness of not less than 3mm and allow it to dry as per the manufacturer's instructions (For full details telephone Tremco Limited 01753 691696). NB additional thickness may be required to bring the floor finish up to that of the adjacent finishes.*

• **PVC Sheet Flooring (M50)**

Manufacturer : *As Drawings.*  
Product Reference : *As Drawings.*  
Width : *Contractor's choice to minimise joints.*  
Thickness : *2 mm.*  
Colour And Pattern : *As drawing TBA.*  
Primer : *As adhesive manufacturer's recommendations.*  
Adhesive : *As sheet manufacturer's recommendations.*  
Seam Jointing : *Hot welded joints.*

• **Coved Skirtings For PVC Flooring (M50)**

Manufacturer : *As PVC sheet flooring.*  
Type : *Cove former.*  
Size : *100 mm upstand.*  
Colour : *N/A*  
Jointing : *Hot welded joints, pay particular attention at door openings.*  
Top Edge Seal : *Matching capping seal.*

£

## 4.3 Ceiling Finishes

### 4.3.1 Finishes To Ceilings

#### 190 Vapour Control Plasterboard And Skim To Ceilings Where Disturbed

Drawing Reference : *6917 WD 12*  
Location : *Male and Female WCs, Corridor outside these areas.*

• **M20a Single Layer Plasterboard Backings Screw Fixed (M20A)**

Manufacturer : *British Gypsum*  
Plasterboard : *Gyproc Wallboard Duplex 10*  
Thickness : *12.5 mm.*  
Edge Profile : *Tapered.*  
Fixing : *Nail fixed as manufacturer's recommendations.*

• **M20a Single Coat Board Finish Plaster (M20A)**

Manufacturer : *British Gypsum*  
Plaster : *Gypsum finish plaster.*  
Surface Preparation : *Tape joints.*  
Thickness : *2-3 mm, applied in one coat.*  
Finish : *Smooth.*

• **Emulsion Painting System (M60)**

Manufacturer : *Dulux*  
Product Range Reference : *Vinyl Matt*  
Preparation : *Prepare surfaces for decoration.*  
Initial Coats : *Thinned coat emulsion.*  
Finishing Coats : *Two coats vinyl matt emulsion.*  
Extent : *Finishing coats to all ceiling.*  
Colour : *As schedule.*

**Total for Section 4 £**

To be carried forward to Tender Summary (page 27)

## 5 FITTINGS AND FURNISHINGS

£

### 5.1 Fittings, Fixtures and Furniture

#### 200 Framed Panel Cubicles

Drawing Reference : 6917 WD 12  
Location : Male and Female WC

- Panel Lining System Division between Male and Female WCs & to Receive **Concealed Cisterns. (K32)**  
Manufacturer : Armitage Venesta, Chartwell Court West Mill Imperial Business Park Gravesend Kent DA11 0DL.  
Product Reference : Award System.  
Site Frame : Extruded aluminium base and headrail with Rolled metal wall channel framing.  
Sub-frame : Rolled galvanised steel section with 17mm MR chipboard sub-frame inc all fixings & brackets  
Panel Sizes : To suit cubicals & as detailed drawing.  
Flashgap Material : Manufacturer's standard.  
Flashgap Colour : Colour to be agreed from the Award range.  
Panel Core : Manufacturer's standard.  
Panel Facing : Manufacturer's standard.  
Panel Colour : Colour to be agreed from the Award range.  
Panel Edge Lipping : Manufacturer's standard.
- **Lined Framed Vanity Unit to Male and Female WCs. (K32)**  
Product Reference : From Armitage Venesta Award Range.  
Worktop : Armitage Venesta 30mm thick Bullnosed double post formed nosing  
Site Frame : 44x44mm softwood framing.  
Panel Sizes : To suit cubicals & as detailed drawing.  
Flashgap Material : PVC.  
Flashgap Colour : Black.  
Panel Core : Manufacturer's standard.  
Panel Facing : Manufacturer's standard.  
Panel Colour : Colour to be agreed from the Award range.  
Panel Edge Lipping : Manufacturer's standard.

#### 210 Unframed Panel Cubicles

Drawing Reference : 6917 WD 12  
Location : Between Male and Female WCs

- **Panel Cubicles Unframed (K32)**  
Manufacturer : Armitage Venesta, Chartwell Court West Mill Imperial Business Park Gravesend Kent DA11 0DL. .  
Product Reference : Award System.  
Cubicle Sizes : As drawings.  
Panel Core : Manufacturer's standard.  
Panel Facing : Manufacturer's standard.  
Panel Colour : Colour to be agreed from the Award range.  
Panel Edge Lipping : Manufacturer's standard.  
Pilaster Material : As panels.  
Pilaster Colour : Colour to be agreed from the Award range..  
Pilaster Edge Lipping : Manufacturer's standard.  
Door Material : As panels.  
Door Colour : Colour to be agreed from the Award range..  
Door Edge Lipping : Manufacturer's standard.  
Door Hanging : To hang open.  
Bracket And Leg : Powder coated aluminium.  
Bracket And Leg Colour : Colour to be agreed from the Award range..  
Ironmongery : Manufacturer's standard colour to be agreed.

#### 220 Vanity Unit

Drawing Reference : 6917 WD 12.  
Location : Male and Female WCs

Total for page £

To be carried forward to Section 5 collection (page 14)

<ul style="list-style-type: none"> <li>• <b>Lined Framed Vanity Unit to Male and Female WCs. (K32)</b>  Product Reference : <i>From Armitage Venesta Award Range.</i>  Worktop : <i>Armitage Venesta 30mm thick Bullnosed double post formed nosing</i>  Site Frame : <i>44x44mm softwood framing.</i>  Panel Sizes : <i>To suit cubicals &amp; as detailed drawing.</i>  Flashgap Material : <i>PVC.</i>  Flashgap Colour : <i>Black.</i>  Panel Core : <i>Manufacturer's standard.</i>  Panel Facing : <i>Manufacturer's standard.</i>  Panel Colour : <i>Colour to be agreed from the Award range.</i>  Panel Edge Lipping : <i>Manufacturer's standard.</i></li> </ul>	£
<p><b>230 Baby Change Unit</b>  Drawing Reference : <i>6917 WD 12.</i>  Location : <i>To Female WCs</i></p> <ul style="list-style-type: none"> <li>• <b>Lined Framed Vanity Unit to Male and Female WCs. (K32)</b>  Product Reference : <i>From Armitage Venesta Award Range.</i>  Worktop : <i>Armitage Venesta 30mm thick Bullnosed double post formed nosing</i>  Site Frame : <i>44x44mm softwood framing.</i>  Panel Core : <i>Manufacturer's standard.</i>  Panel Facing : <i>Manufacturer's standard.</i>  Panel Colour : <i>Colour to be agreed from the Award range.</i></li> </ul>	
<p><b>240 Building Signs Generally</b>  Location : <i>Ground floor.</i></p> <ul style="list-style-type: none"> <li>• <b>Internally Mounted Health And Safety Signs Generally (N15)</b>  Manufacturer : <i>Contractor's choice.</i>  Range Reference : <i>Allow for new fire escape signs.</i>  Escape Route Signs Wall Mounted : <i>450 x 150 mm rigid plastics escape route signs to BS 5499-4.</i>  Escape Route Signs Suspended : <i>450 x 150 mm rigid foamboard escape route signs to BS 5499-4.</i>  Fire Equipment Safety Signs Internal : <i>450 x 150 mm rigid plastics fire equipment safety signs to BS 5499-5 with supplementary text.</i>  Mandatory Fire Safety Notices : <i>Self adhesive vinyl mandatory fire safety notices to BS 5499-5.</i>  Fixing Of Wall Mounted Escape Route Signs : <i>As manufacturer's recommendations.</i>  Fixing Of Wall Mounted Signs Generally : <i>As manufacturer's recommendations.</i>  Fixing Of Suspended Signs : <i>Manufacturer's standard suspension kit, mounting height 2.3 m above floor level.</i></li> <li>• <b>Tactile Signs For The Visually Impaired (N15)</b>  Manufacturer : <i>Contractor's choice.</i>  Product Reference : <i>Disabled WC, Male WC &amp; Female WC signs.</i>  Sign Type : <i>signs must be legible to people with visual impairment</i>  Material : <i>Rigid plastics.</i>  Mounting Height To Base Of Sign : <i>1.4 m.</i>  Fixing : <i>As manufacturer's recommendations.</i></li> </ul>	
<b>Total for Section 5 £</b> To be carried forward to Tender Summary (page 27)	

## 6 SERVICES

£

### 6.1 Sanitary Appliances

#### 250 Wash Basins

Drawing Reference : 6917 WD 12  
Location : Male and Female WC areas G 05 & 06.

- **Wash Basin (N13)**  
Manufacturer : *Ideal Standard.*  
Product Reference : *Ideal Standard Studio Furniture 56 or similar approved*  
Type : *semi-countertop, vitreous china, size 560 wide x 460 mm, colour white, single tap hole, overflow no plug or chain stay.*  
Waste : *DN30, chrome plated strainer basin waste, no chain stay no plug.*  
Trap : *DN30, 75 mm seal bottle trap, white plastics.*  
Taps : *Armitage Shanks Avon mixer chrome plated, ref S7316AA. Contractor is to check that balanced minimum supplies of 1.0 Bar is achievable*
- **Sealant For Sanitary Fittings (N13)**  
Manufacturer : *Contractor's choice.*  
Product Reference : *Contractor to advise.*  
Type : *High modulus one part silicone sealant, colour to match fittings.*
- **Copper Pipelines For Hot And Cold Water System (S90)**  
Manufacturer : *Contractor's choice.*  
Product Reference : *Kitemark certified.*  
Size : *Contractor's choice to suit system requirements.*  
Connections To Appliances : *Contractor's choice.*  
Supports : *Plastics spacers, single screw fixing.*
- **Thermostatic Mixing valve**  
Manufacturer : *Contractor's choice.*  
Product Reference : *Kitemark certified, Type 3 WRAS approved*
- **Flow Reducing And Servicing Valves For Hot And Cold Water System (S90)**  
Manufacturer : *Contractor's choice.*  
Product Reference : *Contractor to advise.*  
Position : *To water supply pipework connections to heat sources, cisterns and tanks on the hot and cold water system.*  
Finish : *Contractor's choice to match pipework.*
- **MUPVC Or PVCC Waste Pipework (R11)**  
Manufacturer : *Contractor's choice.*  
Product Reference : *Contractor to advise.*  
Nominal Sizes : *DN 32 branches into DN 50.*  
Colour : *White where exposed to view.*  
Brackets : *Plastics pipe clips, colour to match pipes.*  
Fasteners : *As manufacturer's recommendations.*  
Accessories : *Access fittings.*  
Testing : *Test on completion.*

#### 260 Female WC

Drawing Reference : 6917 WD 12  
Location : Female WC G 06

- **WC Pan And Seat (N13)**  
Manufacturer : *Armitage Shanks.*  
Product Reference : *Contour 21 BTW raised height or equal approved*  
WC Pan : *Raised height , vitreous china, colour white.*  
Flushing Arrangement : *Washdown.*  
Seat And Cover : *Contour 21 Plastic, ref S4065. Supply contrasting seat, colour to be confirmed.*  
*Complete with hinges fixings etc*  
Pan Connector : *Type, contractor's choice to suit installation. Colour white if seen.*
- **WC Cistern And Flushpipe (N13)**  
Manufacturer : *Armitage Shanks.*  
Product Reference : *Conceala 2 Ref. S364367 or equal approved*  
Type : *WC cistern, low level, flushpipe, white plastic, 4.5 & 3 litre dual flush option*  
Capacity : *6 litre, bottom supply.*  
Fittings : *Float operated valve and plastics syphon fittings, internal overflow.*  
Operation : *Armitage Shanks S/S Flush plate, ref. S4504MY.*

Total for page £

To be carried forward to Section 6 collection (page 24)

- **Sealant For Sanitary Fittings (N13)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Type : *High modulus one part silicone sealant, colour to match fittings.*
- **Copper Pipelines For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Kitemark certified.*  
 Size : *Contractor's choice to suit system requirements.*  
 Connections To Appliances : *Contractor's choice.*  
 Supports : *Plastics spacers, single screw fixing.*
- **Flow Reducing And Servicing Valves For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Position : *To water supply pipework connections to heat sources, cisterns and tanks on the hot and cold water system.*  
 Finish : *Contractor's choice to match pipework.*
- **PVCU Soil And Vent Pipework (R11)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Agrément certified.*  
 Coupling Type : *Manufacturer's standard.*  
 Nominal Sizes : *DN 110.*  
 Colour : *Contractor's choice.*  
 Brackets : *Plastics pipe clips, colour to match pipes.*  
 Fasteners : *As manufacturer's recommendations.*  
 Fastener Size : *As manufacturer's recommendations.*  
 Accessories : *Access fittings at all changes in direction.*  
 Testing : *Test on completion.*
- **Grab Rails**  
 Manufacturer : *Armitage Shanks.*  
 Reference : *4No. 600mm x 35mm S/S or colour to be confirmed, ref. S6896 to each cubical marked with 750 activity space.*
- **Clothes Hook Set**  
 Manufacturer : *Armitage Shanks.*  
 Reference : *1No. Clothes hook set 1400mm AFFL to each cubical marked with 750 activity space.*

## 270 Male WC

- Drawing Reference : *6917 WD 12*  
 Location : *Male WC G 05*
- **WC Pan Cistern And Seat (N13)**  
 Manufacturer : *Armitage Shanks.*  
 Product Reference : *Armitage Shanks Contour 21cc or equal approved*  
 WC Pan : *Raised height close coupled pan Ref. S3054, colour white.*  
 Flushing Arrangement : *Washdown.*  
 Seat : *Contour 21 Plastic, ref S4065. Supply contrasting seat, colour to be confirmed. Complete with hinges fixings etc*
  - **WC Cistern (close coupled) (N13)**  
 Manufacturer : *As WC pan.*  
 Product Reference : *Contour 21 Cistern, vitreous china, colour white or equal approved*  
 Type : *WC cistern, close coupled, vitreous china, colour white. Flushpipe, white plastics, Ref. S3654.*  
 Capacity : *4.5 litre, bottom supply.*  
 Fittings : *Float operated valve and plastics freeflow syphon fittings, internal overflow.*  
 Operation : *Chrome plated spatula lever handle assembly, ref. S4420.*
  - **Sealant For Sanitary Fittings (N13)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Type : *High modulus one part silicone sealant, colour to match fittings.*
  - **Copper Pipelines For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Kitemark certified.*  
 Size : *Contractor's choice to suit system requirements.*  
 Connections To Appliances : *Contractor's choice.*  
 Supports : *Plastics spacers, single screw fixing.*

Total for page £

To be carried forward to Section 6 collection (page 24)



£

- **Flow Reducing And Servicing Valves For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Position : *To water supply pipework connections to heat sources, cisterns and tanks on the hot and cold water system.*  
 Finish : *Contractor's choice to match pipework.*
- **PVCU Soil And Vent Pipework (R11)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Agrément certified.*  
 Coupling Type : *Manufacturer's standard.*  
 Nominal Sizes : *DN 110.*  
 Colour : *Contractor's choice.*  
 Brackets : *Plastics pipe clips, colour to match pipes.*  
 Fasteners : *As manufacturer's recommendations.*  
 Fastener Size : *As manufacturer's recommendations.*  
 Accessories : *Access fittings at all changes in direction.*  
 Testing : *Test on completion.*
- **Grab Rails**  
 Manufacturer : *Armitage Shanks.*  
 Reference : *4No. 600mm x 35mm S/S or colour to be confirmed, ref. S6896 to each cubical marked with 750 activity space.*
- **Clothes Hook Set**  
 Manufacturer : *Armitage Shanks.*  
 Reference : *1No. Clothes hook set 1400mm AFFL to each cubical marked with 750 activity space.*

## 280 Urinal

- Drawing Reference : *6917 WD 12*  
 Location : *Male WC G 05*
- **Contractor Designed Water Supply System (S90)**  
 Design : *Design and detail the water supply installation to BS 6700 or BS EN 806-2.*
  - **Urinal (N13)**  
 Manufacturer : *Armitage Shanks*  
 Product Reference : *Aridian Waterless HTM64 (UR H)*  
 Type : *Bowl urinal, vitreous china, colour white.*  
 Waste : *DN40 plastics grated waste, white to BS NE 274.*  
 Additional Cartridges : *2No. Ref. S6282 handed to employer on completion.*
  - **Sealant For Sanitary Fittings (N13)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Type : *High modulus one part silicone sealant, colour to match fittings.*
  - **Polypropylene Waste Pipework (R11)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Nominal Sizes : *DN 32 branches into DN 50.*  
 Colour : *White where exposed to view.*  
 Brackets : *Plastics pipe clips, colour to match pipes.*  
 Fasteners : *As manufacturer's recommendations.*  
 Accessories : *Access fittings at all changes in direction.*  
 Testing : *Test on completion.*

## 290 Disabled User Sanitary Suite

- Drawing Reference : *6917 WD 12*  
 Location : *Disabled WC G 04*
- **Disabled User WC Suite (N13)**  
 Manufacturer : *Armitage Shanks.*  
 Product Reference : *Special care Doc M CC pack.*  
 Suite Colour : *White, Supply contrasting seat, colour to be confirmed.*  
 Pan Connector : *As drawing.*

Total for page £

To be carried forward to Section 6 collection (page 24)

- **Glass Mirrors (L40)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor's choice.*  
 Type : *4 mm clear float glass.*  
 Size : *As required in part M of the building regulations*  
 Edge Treatment : *As required in part M of the building regulations*  
 Protective Backing : *Anticorrosive paint.*  
 Fixing : *Double sided self-adhesive pads at 400 mm centres.*
- **Sealant For Sanitary Fittings (N13)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise*  
 Type : *High modulus one part silicone sealant, colour to match fittings.*
- **Copper Pipelines For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Kitemark certified.*  
 Size : *Contractor's choice to suit system requirements.*  
 Connections To Appliances : *Contractor's choice.*  
 Supports : *Plastics spacers, single screw fixing.*
- **Flow Reducing And Servicing Valves For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Position : *To water supply pipework connections to heat sources, cisterns and tanks on the hot and cold water system.*  
 Finish : *To match pipework.*
- **PVCU Soil And Vent Pipework (R11)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Coupling Type : *Manufacturer's standard.*  
 Nominal Sizes : *DN 110.*  
 Colour : *White where not concealed.*  
 Brackets : *Plastics pipe clips, colour to match pipes.*  
 Fasteners : *As manufacturer's recommendations.*  
 Fastener Size : *As manufacturer's recommendations.*  
 Accessories : *Access fittings at all changes in direction.*  
 Testing : *Test on completion.*
- **MUPVC Or PVCC Waste Pipework (R11)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Nominal Sizes : *DN 32 branches into DN 50.*  
 Colour : *White where exposed to view.*  
 Brackets : *Plastics pipe clips, colour to match pipes.*  
 Fasteners : *As manufacturer's recommendations.*  
 Accessories : *Access fittings at all changes in direction.*  
 Testing : *Test on completion.*

## 6.2 Disposal Installations

### 6.2.1 Internal Drainage

#### 300 Remove Existing and Form New Internal Foul Drainage System

Drawing Reference : *6917 AL(03)02*

Location : *Male and Female WCs*

- **Removing Internal Drainage Stacks And Branches**

Type : *As indicated on drawings.*

Extent : *As required to suit proposed layouts.*

Disposal : *Remove from site.*

- **Removing Internal Waste Pipework**

Type : *As indicated on drawings.*

Extent : *As required to suit proposed layouts.*

Disposal : *Remove from site.*

Total for page £

To be carried forward to Section 6 collection (page 24)

- **Form new PVCU Soil And Vent Pipework to serve new sanitary fittings (R11)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Agrément certified.*  
 Coupling Type : *Contractors choice.*  
 Nominal Sizes : *DN 110.*  
 Colour : *Contractors choice*  
 Brackets : *Plastics pipe clips, colour to match pipes.*  
 Fasteners : *As manufacturer's recommendations.*  
 Fastener Size : *As manufacturer's recommendations.*  
 Accessories : *Access fittings and automatic air admittance valve and all other fittings to complete the installation*  
 Testing : *Test on completion.*
- **Form new MUPVC Or PVCC Waste Pipework from hand basins to drain runs (R11)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Agrément certified*  
 Nominal Sizes : *Contractor's choice.*  
 Colour : *White where exposed to view.*  
 Brackets : *Plastics pipe clips, colour to match pipes.*  
 Fasteners : *As manufacturer's recommendations.*  
 Accessories : *Provide access fittings to render all sections roddable.*  
 Testing : *Test on completion.*

## 6.3 Water Installations

### 6.3.1 New Hot And Cold Water Installation

#### 310 Extend Hot And Cold Water Pipework

Drawing Reference : *6917 WD 12*  
 Location : *Male, Female and Disabled WCs*

- **Copper Pipelines For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Kitemark certified.*  
 Size : *Contractor's choice to suit system requirements.*  
 Connections To Appliances : *Contractor's choice.*  
 Supports : *Plastics spacers, single screw fixing.*
- **Pipeline Insulation For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Type : *Preformed flexible closed cell foam, split tube.*  
 Thickness : *25 mm.*
- **Flow Reducing And Servicing Valves For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Position : *To water supply pipework connections to heat sources, cisterns and tanks on the hot and cold water system.*  
 Finish : *Contractor's choice to match pipework.*
- **Surface Mounted Trunking For Hot And Cold Water System Pipelines (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Type : *PVC trunking, colour white.*  
 Size : *To accommodate system pipework.*  
 Position : *All areas where pipework would be otherwise exposed.*  
 Sealant : *Nonhardening, noncracking, water resistant compound.*
- **Masking Plates For Hot And Cold Water System Pipelines (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Type : *White plastics cover plate, 50 mm diameter, to fit pipework.*  
 Location : *To exposed pipework at penetrations of building fabric.*

### 6.3.2 Hot Water Services

#### 320 Hot Water Supply From Existing Heating System Boiler

Drawing Reference : *6917 AL(03)02*  
 Location : *Male, Female and Disabled WCs*

Total for page £

To be carried forward to Section 6 collection (page 24)

- **Copper Pipelines For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Kitemark certified.*  
 Size : *Contractor's choice to suit system requirements.*  
 Connections To Appliances : *Contractor's choice.*  
 Supports : *Plastics spacers, single screw fixing.*
- **Pipeline Insulation For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to submit proposals.*  
 Type : *Preformed flexible closed cell foam, split tube.*  
 Thickness : *32 mm.*
- **Flow Reducing And Servicing Valves For Hot And Cold Water System (S90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to submit proposals.*  
 Position : *To water supply pipework connections to heat sources, cisterns and tanks on the hot and cold water system.*  
 Finish : *Contractor's choice to match pipework.*

## 6.4 Space Heating

### 6.4.1 Water Central Heating

#### 330 Add Steel Panel Radiator To Existing Heating System

Drawing Reference : *6917 WD 12*  
 Location : *Male, Female and Disabled WCs.*

- **Parameters For Contractor To Size Radiators (T90)**  
 Assumed External Air Temperature : *-4°C.*  
 Basic Design Temperatures : *As schedule.*  
 Thermal Insulation Of The Building Fabric : *As schedule.*  
 Design Flow Temperature : *82°C (maximum).*  
 Difference Across Primary Heating Circuit : *10°C.*  
 Difference Across Primary Hot Water Circuit : *11°C (maximum).*  
 Water Velocity : *Nominal 1 m/s.*  
 Gravity Circulation : *Gravity circulation must not occur in the heating circuit. Design the system accordingly or fit an antigravity valve.*  
 Heating System Capacity : *Usage calculation allowance: +10%. Exposure calculation allowance: +10%.*
- **Removing Water Pipework For Heating System**  
 Type : *Copper flow and return pipework.*  
 Quantity : *6917 WD 12.*  
 Preparation : *Isolate and disconnect.*  
 Disposal : *Remove from site for recycling.*
- **Steel Panel Radiators (T90)**  
 Manufacturer : *Contractor's choice; submit proposals to CA.*  
 Product Reference : *Contractor to advise.*  
 Type : *To suit heat output requirements.*  
 Size : *Calculate to provide design temperatures.*  
 Finish : *Manufacturer's standard.*  
 Position : *As drawing 6917 WD 12*  
 Foil Backing : *Fix reflective foil to wall behind radiator.*
- **Copper Pipeline For Heating System (T90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Kitemark certified.*  
 Nominal Size : *Contractor's choice to suit system requirements.*  
 Connections To Appliances : *Compression fittings.*  
 Supports : *Plastics spacers, single screw fixing.*
- **Thermostatic Radiator Valves (T90)**  
 Manufacturer : *Contractor's choice.*  
 Product Reference : *Contractor to advise.*  
 Type : *Contractor's choice, to suit system requirements.*  
 Mounting : *Contractor's choice, to suit system requirements.*  
 Size : *Contractor's choice, to suit system requirements.*  
 Finish : *Chrome plated copper alloy.*
- **Testing Low Temperature Hot Water Heating System (T90)**  
 Extent : *Test and balance whole heating and hot/ cold water supply systems.*

Total for page £

To be carried forward to Section 6 collection (page 24)

## 6.5 Ventilating System

### 340 New Extract Fan In Existing External Cavity Wall

Drawing Reference : 6917 WD 12, 13 & 14.

Location : Disabled WC.

- **Ventilation Fan Unit Ceiling Mounted (U90)**  
 Manufacturer : Contractor's choice.  
 Product Reference : Contractor to advise.  
 Type : Extract fan only.  
 Antibackdraught Shutter : Not required.  
 Adjustable Integral Overrun Timer : Required.  
 Performance : 6 L/s (minimum) installed performance.  
 Accessories : N/A  
 Control : Operated by proximity sensor, PIR.
- **External Air Bricks for Exhaust Grille (U90)**  
 Manufacturer : Contractor's choice.  
 Product Reference : Contractor to provide sample for approval prior to order.  
 Type : Yellow air brick  
 Size : 215x215 mm.  
 Material : Aluminium, mill finish.  
 Accessories : Not required.
- **Forming Opening In Existing Wall (F10)**  
 Leaf Thickness : As drawing 6917 WD 12.  
 Preparation : Cut plaster back to neat lines before forming opening.  
 Temporary Supports : Submit method statement detailing temporary support to structures over proposed opening during the work.  
 Disposal : Remove from site for recycling.
- **Rigid PVCU Pipe Ventilation Duct (U90)**  
 Manufacturer : Contractor's choice.  
 Type : PVC-U pipe.  
 Size : 100 mm diameter.  
 Fixing : Build in.  
 Jointing : Not permitted.
- **Core Drill Hole For Duct.**  
 Drawing Reference : 6917 WD 12.  
 Location : To external wall as shown on dwgs.  
 : Accurately drill hole and opening for brick grille for extract duct.
- **Electric Cable (V90)**  
 Type : Contractor's choice.

## 6.6 Electrical Installations

### 350 Renew Lighting Circuits

Drawing Reference : 6917 WD 10, & 12.

Location : WCs area, Corridor and associated cupboards, as indicated on drawings.

- **Removing Electric Cables (V90)**  
 Extent : Cable, conduit/ trunking and all associated boxes and plates.  
 Location : Individual circuit.  
 Disposal : Remove.
- **Removing Plate Switch (V90)**  
 Extent : Switch, box and cable.  
 Location : As drawing.  
 Disposal : Remove.  
 Making Good : Make good to plaster and decorations.
- **Remove Conduit And Fittings**  
 Extent : Where exposed to view.  
 Location : WCs area, Corridor and associated cupboards.  
 Disposal : Remove.  
 Making Good : Make good to plaster and decorations.
- **Electric Cable (V90)**  
 Type : Contractor's choice.

Total for page £

To be carried forward to Section 6 collection (page 24)

- **Lighting Plate Switch (V90)**  
 Manufacturer : *Mk.*  
 Product Reference : *Logic Plus*  
 Material And Finish : *Grey plastics .*  
 Configuration : *1 gang, two way.*  
 Ingress Protection : *As manufacturer's standard.*  
 Mounting Box : *Metal box for flush mounting.*  
 Mounting Height : *1100 mm above floor level.*
- **Neon Indicator To Plate Switches (V90)**  
 Manufacturer : *Mk.*  
 Product Reference : *Logic Plus*  
 Configuration : *To suit switch.*
- **Ceiling Decorative Luminaire (V90)**  
 Manufacturer : *As Schedule.*  
 Type : *See schedule.*  
 Lamp : *Compact fluorescent.*  
 Performance : *Provide average maintained illuminance of 300 lux (minimum) at worktop height.*
- **Inspection And Testing Of Electrical System (V90)**  
 Inspection And Testing Certification : *Submit two copies.*
- **Documentation (V90)**  
 Contents : *Manufacturer's operating and maintenance instructions for fittings and apparatus.*  
*Manufacturer's guarantees and warranties. As-installed drawings showing circuits and their ratings and locations of fittings and apparatus. List of normal consumable items.*
- **Commissioning Of Electrical System (V90)**  
 Requirements : *As described in the Reference Specification.*

### 360 Replace General Power Circuit

- Drawing Reference : *6917 WD 12*  
 Location : *WCs area Corridor and associated cupboards.*
- **Contractor Designed Electrical Installation (V90)**  
 Mains And Distribution : *Cabling generally to be concealed. Exposed cabling or cables in concrete slabs in class 2 steel conduit.*  
 Design And Detailing : *The drawings show the outline design and layout of the main components of the electrical system. Complete the design, detailing, selection, installation and testing and commissioning of the electrical systems.*  
 Arrangement Of Power Circuits : *Submit proposals for the arrangement and separation of circuits.*  
 Arrangement Of Lighting Circuits : *Submit proposals for the arrangement and separation of circuits.*  
 Special Systems : *Emergency lighting and fire alarm.*  
 External Power Circuit Controls : *RCD protection to external circuits.*  
 External Lighting Circuit Controls : *Photocell control to external lighting circuits.*
  - **Removing Electric Cables (V90)**  
 Extent : *Cable, conduit/trunking and all associated boxes and plates.*  
 Location : *As drawing 6917 WD 12.*  
 Disposal : *Remove.*
  - **Removing Socket Outlet (V90)**  
 Extent : *Socket outlet, box and cable.*  
 Location : *Male and Female WCs and area to receive Disabled WC*  
 Disposal : *Remove.*  
 Making Good : *Make good to plaster and decorations.*
  - **Electric Cable (V90)**  
 Type : *Contractor's choice.*
  - **Standard Socket Outlet (V90)**  
 Manufacturer : *MK.*  
 Product Reference : *Logic Plus*  
 Material And Finish : *Grey plastics contrasting neon switch.*  
 Configuration : *As drawings.*  
 Control : *Switched.*  
 Switch Position : *Outboard.*  
 Indication : *Red marking to rocker switch.*  
 Interlock : *3 pin equal pressure*  
 Mounting Box : *Contractor's choice.*  
 Mounting Height : *800 mm above floor level and 150 mm above working surfaces.*

Total for page £

To be carried forward to Section 6 collection (page 24)

£

- **Fused Connection Unit (V90)**  
 Manufacturer : *MK.*  
 Product Reference : *Logic Plus*  
 Material And Finish : *White plastics.*  
 Control : *Switched.*  
 Indication : *Neon indicator.*  
 Fuse Access : *Tamper proof screw.*  
 Flex Outlet : *Not required.*  
 Mounting Box : *Metal for flush mounting.*  
 Mounting Height : *1350 mm above floor level.*
- **Inspection And Testing Of Electrical System (V90)**  
 Inspection And Testing Certification : *Submit two copies.*
- **Documentation (V90)**  
 Contents : *Manufacturer's operating and maintenance instructions for fittings and apparatus.*  
*Manufacturer's guarantees and warranties. As-installed drawings showing circuits and their ratings and locations of fittings and apparatus. List of normal consumable items.*
- **Commissioning Of Electrical System (V90)**  
 Requirements : *As described in the Reference Specification.*

## 6.6.1 Electric Light Fittings

### 370 Light Fittings

Drawing Reference : *6917 WD 10, 11, 12, 16 & 17.*  
 Location : *As shown on drawings.*

- **Fittings**  
 Manufacturer : *As schedule.*
- **Emergency Lighting Systems (V90)**  
 Manufacturer : *As schedule.*  
 Product Reference : *As schedule.*  
 System : *BS 5266 system type X self-contained.*  
 Mode Of Operation : *BS 5266-1 non-maintained.*  
 Duration : *120.*
- **Inspection And Testing Of Emergency Lighting System (V90)**  
 Inspection And Testing Certification : *Submit two copies.*

## 6.6.2 Communication Installations

### 6.6.2.1 Warning Installations

#### 380 Existing Fire Alarm System

- **Fire Alarm**  
 Drawing Reference : *6917 WD 12.*  
 Location : *Disabled WC.*  
 Extent : *Extend existing fire alarm system to serve the new disabled WC. Fit audio and visual warning device linked to existing system. The Contractor is to keep the existing fire alarm system fully functional during the works.*
- **Fire Alarm**  
 Drawing Reference : *6917 WD 12.*  
 Location : *Male and Female WCs.*  
 Extent : *Adapt the existing fire alarm system to serve the new WC layout. The Contractor is to keep the existing fire alarm system fully functional during the works.*
- **Fire Detection And Alarm System Completion (W50)**  
 Testing And Commissioning : *Test and commission all fire detection and alarm systems and submit documentation.*  
 Training : *Demonstrate all aspects of the functionality and operation of the fire detection and alarm systems to the Employer.*  
 Spares : *Provide spare boxed components to the fire detection and alarm system as schedule.*  
 Maintenance : *Contractor is to provide written description of routine maintenance required to be undertaken by the Clients Fire Alarm Maintenance Contractor.*

Total for page £

To be carried forward to Section 6 collection (page 24)

**390 Emergency Assistance System**

Drawing Reference : 6917 WD 12.  
Location : Disabled WC.

• **Fittings**

Manufacturer : Contractor's choice.  
Reference : Contractor to advise.

Features : Disabled toilet alarm comprising:- Pull cord (pull cord to have high and low level red coloured grips), external indicator to raise the alarm. Visual and audible indicator to confirm that an emergency call has been received, reset control that is reachable from the seat and floor, a signal that is visually and audibly distinguishable from the fire alarm.

£

**Total for Section 6 £**

To be carried forward to Tender Summary (page 27)



**7 Builder's Work**

£

**7.1 Builder's Work in Connection with Hot & Cold Water and Heating Services**

**400 Builder's Work**

- **Builder's Work**  
Item : *Allow for builders work not included elsewhere.*

**7.2 Builder's Work in Connection with Electrical Installation**

**410 Builder's Work**

- **Builder's Work**  
Item : *Allow for builders work not included elsewhere.*

**Total for Section 7 £**

To be carried forward to Tender Summary (page 27)

## 8 External Works

£

### 420 Work To Existing Foul Drain Inspection Chamber

Drawing Reference : 6917 WD 12

Location : Adjacent to WC area

Invert Level : As existing.

- **Excavation (D20)**

Extent : As required to suit existing levels.

- **Clay Engineering Brickwork (F10)**

Brick Manufacturer : Contractor's choice.

Product Reference : To BS EN 771-1

Type : Solid clay engineering bricks, BS 3921 class A.

Work Size : 215 x 102.5 x 65 mm.

Colour And Texture : Manufacturer's standard.

Wall Thickness : 215 mm.

Bond : English.

Mortar Mix : 1:3 sulfate resisting cement:sand and air entrainer.

Joint Profile : Flush.

- **Manhole Channels And Branches For Below Ground Drainage Systems (R12)**

Manufacturer : As drainage pipework.

Product Reference : To suit layout.

Type : As drainage pipework.

Main Channel Size : As outlet pipework.

Branch Channel Sizes : As inlet pipework.

- **Concrete For Benching To Manholes And Inspection Chambers (E10)**

Concrete : As base.

Admixtures : Concrete producer's choice.

Topping To Benching : 1:3 cement:sand laid monolithically with benching and floated to hard smooth surface.

- **Completion Of Backfilling To Trenches And Excavations To Below Ground**

- Drainage Systems (R12)**

Backfill For Excavations In Paved Areas : Selected fill compacted in layers to 200 mm (maximum) from finished ground surface.

Backfill For Excavations In Planting Areas : Selected fill compacted in layers to 300 mm (maximum) from finished ground surface.

### 430 Replace Existing Clay Foul Drain with PVCu To Suit New Lines

Drawing Reference : 6917 WD 12

Location : Adjacent to WC area.

General Bedding Class To Vitrified Clay Pipework : As existing.

- **Excavation (D20)**

Extent : As required to suit existing levels..

- **Removing Pipework To Below Ground Drainage Systems**

Extent : As required to suit new layout.

Disposal : Remove from site.

- **New Pipework For Below Ground Drainage Systems (R12)**

Manufacturer : Contractor's choice.

Product Reference : Kitemark certified.

Size : DN 100.

Minimum Crushing Strength : Manufacturer's standard.

Jointing : Manufacturer's standard.

- **Slip Couplings For Below Ground Drainage Systems (R12)**

Manufacturer : As drainage pipework.

Product Reference : Contractor's choice.

- **Completion Of Backfilling To Trenches And Excavations To Below Ground**

- Drainage Systems (R12)**

Backfill For Excavations In Paved Areas : Selected fill compacted in layers to 200 mm (maximum) from finished ground surface.

Backfill For Excavations In Planting Areas : Selected fill compacted in layers to 300 mm (maximum) from finished ground surface.

Total for Section 8 £

To be carried forward to Tender Summary (page 27)

**St Philips Church and Community Centre Schedule of works - Schedule of Work**

Tender Summary	£
Preliminaries	
0 DEMOLITION, SITE CLEARANCE AND ALTERATIONS (page 3)	
1 SUBSTRUCTURE (page 5)	
2 SUPERSTRUCTURE (page 6)	
3 Internal Doors (page 7)	
4 FINISHES (page 10)	
5 FITTINGS AND FURNISHINGS (page 13)	
6 SERVICES (page 15)	
7 Builder's Work (page 25)	
8 External Works (page 26)	
<b>Total £</b>	

Signed \_\_\_\_\_

For and on behalf of \_\_\_\_\_

Date \_\_\_\_\_