

Project Specification:
Gravesend Old Town Hall
High Street, Gravesend, DA11 0AZ

Skanska Building Services

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SKANSKA

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REVISION CONTROL SCHEDULE



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Gravesham Borough Council

1. Introduction

This Specification provides project definitions and information on general project-wide items.

1.1 Precedence

In the event of any conflict in the information provided, if Contract Drawings are provided, these shall take precedence over the Project Specification.

1.2 The Contractor

Throughout this document the term “Contractor” means **Skanska Construction UK Limited**, whose registered office is Maple Cross House, Denham Way, Maple Cross, Rickmansworth, Hertfordshire, WD3 9SW

1.3 Trade Contractor

Unless explicitly stated otherwise the Trade Contractor means the Contractor employed to carry out a particular package of work.

1.4 The Supervising Officer (S.O.)

The Supervising Officer herein referred to, as the S.O. shall be the Contractor’s nominated site representative.

In certain contracts the Supervising Officer may be known as the Contract Administrator (C.A.). In such cases the duties of the S.O. shall be carried out by the C.A.

1.5 Inspection by the Supervising Officer and Skanska Technology

The Trade Contractor shall provide the S.O. and Skanska Technology (ST) reasonable opportunity and facility for them to inspect constituent materials at source and specified items during manufacture and construction, and to take any samples or to make any tests.

1.6 Definitions

- 1.6.1 In this specification the terms “review” “reviewed” “required” and “agreed” mean “approval in writing of the S.O.”, “approved in writing by the S.O.”, “required by the S.O.” and “agreed with the S.O.” respectively unless indicated otherwise.
- 1.6.2 Service Life – Period of time after installation during which a facility or component meets or exceeds performance requirements, before requiring maintenance of a significant level of cost.
- 1.6.3 Design Life – Period of use intended by the designer, with minor maintenance during this period.

1.7 British Standards and BS Codes of Practice

All materials, workmanship and where appropriate, design shall be in accordance with the appropriate British Standards, BS Codes of Practice or Building Regulations. In those few instances where this Specification requires a higher standard, this is indicated in the text and takes precedence over the relevant British Standards or BS Codes of Practice.

1.8 Reference to British Standards and Codes of Practice

References to BSI documents are to be the versions and amendments listed in the BSI Standards Catalogue applicable at the time of tender and in subsequent issues of BSI Newsletters up to and including that for the time of tender. The Works shall be completed in accordance with any changes to the British Standards during construction.

1.9 Trade Contractor's Responsibilities

The Trade Contractor shall allow in his price for all relevant requirements of this Specification including all costs associated with inspection, testing and trial assemblies, whether on or off site.

The Contractor shall be responsible for all necessary technical and programming co-ordination between Trades, Suppliers and Specialists Firms.

1.10 Amendments to this Specification

ST may consider amendments to the Sections in this Specification. Such amendments shall be submitted by the Contractor to ST for their approval at least 10 working days in advance of their proposed implementation.

2. Statutory Requirements

2.1 General

The Trade Contractor shall comply with the requirements of all relevant statutory regulations and local by-laws and all other relevant current legislation, codes of practice, advice and guidance notes issued by any competent authority.

2.2 Health, Safety, Welfare and Environment

All work, including temporary works, shall be carried out safely in accordance with the requirements of all current relevant legislation including but not limited to:

2.2.1 Health and Safety

Health and Safety at Work etc Act 1974 and all subsidiary Regulations

Factories Act 1961 and all subsequent amendments

Construction Regulations 1961 and 1966

Control of Pollution Act 1974

Control of Substances Hazardous to Health Regulations 2002

The Construction (Design and Management) Regulations 2007

Construction (Health Safety and Welfare) Regulations 1996 and the Contractor's written safety policy.

Provision and Use of Work Equipment Regulations 1998

Lifting Operations and Lifting Equipment Regulations 1998

Working at Height Regulations 2005

Management of Health and Safety at Work Regulations 1999

Code of Practice for Demolition BS6187: 2000

2.2.2 Environment

Control of Pollution Act 1974

Environmental Protection Act 1990

Environmental Protection (Duty of Care) Regulations 1991

Water Resources Act 1991

Wildlife and Countryside Act

Waste Management Licensing Regulations

Controlled Waste Regulations 1992

Special Waste Regulations

Water Industries Act 1991

Pollution Prevention and Control Act 1999

2.3 Notices, Consents and Licences

The Trade Contractor shall give all notices required by the Local Authority and appropriate Statutory Undertakings and shall pay all fees in connection therewith.

The Trade Contractor shall 10rise from the appropriate Local Authority all consents and licences that may be required for the erection of temporary hoardings, fencing, lighting etc.

The Trade Contractor shall not commence work until the necessary notices have been given to the appropriate Authorities and the necessary approvals and warrants etc. have been obtained. All work shall be carried out in accordance with the requirements of the Consents and Licences.

2.4 Control of Substances Hazardous to Health (COSHH)

The specification of substances and materials which could be regarded as hazardous under the Control of Substances Hazardous to Health Regulations 2002 (COSHH) has been avoided where possible. However, this cannot be achieved in certain cases as the hazard is often dependent on the environment in which the material is used or the work is taking place.

The Trade Contractor's attention is drawn to the fact that he is responsible for ensuring that any actions or precautions necessary to satisfy the requirements of COSHH in using substances or materials are implemented, including obtaining any specialist advice that may be necessary to achieve this.

3. Standards and Quality

The design, fabrication, installations, and performance requirements herein specified are intended to establish minimum performance and general principles.

3.1 Building Regulations, Statutory Legislations, Standards and Guidelines

The latest edition of the approved documents to the Building Regulations shall be used where relevant for the purpose of the design, unless confirmed or clarified by the Approved Inspector. The project shall be subject to the CDM (Construction, Design and Management regulations – 2015). All materials and method of construction shall conform to the recommendations and requirements of the Building Research Establishment and the British Board of Agreement, where applicable.

The development shall conform to the following design standards, but not limited to:-

- Building Regulations (current applicable edition)
- Relevant British Standards and Code of Practice
- Local Authority Bylaws
- Health and Safety at Works/COSHH Regulations
- Building Services Research and Information Association
- CWCT Standards and Recommendations

The British Standards stand in first place and the EN standards have validity where no appropriate British standards are current. The British Standard Code of Practice and any other guidelines and recommendations of professional associations can supplement the British or European Standards. They are, however, subordinate to the British Standards. Where no appropriate British or EN Standards exist, the specified DIN and American Standards shall be valid.

Fire safety will be compliant with AD-Part B, and BS 9999 as applicable and confirmed by the Approved Inspector.

Accessibility will be compliant with AD-Part M and BS 8300 and in accordance with the Equality Strategy in the Schedule 8 Part 4.

3.2 Reference Standards: Conflicting Information

Where there is in existence a relevant British Standard, BS EN Standard, or other relevant national standard, then the recommendations and requirements of such documents shall be considered a minimum standard for the work. If, in the opinion of the Trade Contractor, the reference standards conflict, or are potentially in conflict with the specific technical provisions of this specification, this shall be brought to the attention of the Contractor before the design, detailing, or installation of the works has commenced.

3.3 Product Substitution

Wherever products are specified by proprietary name, the phrase 'or equal approved' is to be deemed included.

3.3.1 Substitution of Products; Procedure to be followed

If an alternative product to that specified is proposed, obtain approval before ordering the product, and provide information to the Contractor in accordance with the following procedure:

- Submit reasons for the proposed substitution, and
- Submit relevant information, including:
 - Manufacturer and product reference, original specification reference and full technical details
 - Cost comparison
 - Availability
 - Relevant standards
 - Performance
 - Function
 - Compatibility of accessories
 - Proposed revisions to drawings and specification
 - Compatibility with adjacent work
 - Appearance
 - Copy of warranty/ guarantee and written confirmation that it complies with original specification requirements
 - Statement of design and programme implications on existing design proposals and site works and any other implications for project activities
- Alterations to adjacent work: If needed, advise scope, nature and cost.
- Manufacturers' guarantees: If substitution is accepted, submit before ordering products.
- As a minimum, any substituted products should comply with specification requirements.

3.4 Incomplete Documentation

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, and

- Suitable for the purposes stated or reasonably to be inferred from the project documents. Omissions or errors in description and/ or quantity shall not vitiate the Sub-Contract nor release the Sub-Contractor from any obligations or liabilities under the Contract.

3.5 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.

3.6 Quality of products

- Generally: Products must be new (proposals for recycled products may be considered)
- The Sub-Contractor shall ensure that materials and products are provided in accordance with the appropriate BS or BS EN Standard and where there is no applicable BS or BS EN Standard the Sub-Contractor shall provide evidence of European Technical Approvals (ETA) issued by the BBA.
- 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: In order to prevent deterioration order in suitable quantities to a programme and use in appropriate sequence.

3.7 Construction Products Regulation (CPR) and CE Marking

Where required under the CPR, provide evidence that the product is certified with the appropriate 'CE mark' and declare that the product meets all appropriate provisions of the relevant legislation.

Provide evidence that the product and supply chain (including importers and distributors in UK) are aware of the essential characteristics or specific requirements of member states.

European Technical Approvals (ETA's) issued in accordance with the CPD before April 2015, may be used in support of product documentation.

3.8 Quality Management

The Trade Contractor is to operate and maintain an environmental management system recognised by ISO 14001.

3.9 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 prior to completion of the shop drawings / commencing fabrication.

Finished work: Not defective, 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.

3.10 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.

Each manufacturer must be willing to admit the Contractors representatives to his premises during normal working hours for the purpose of examining and witnessing the testing of materials and equipment proposed in the Works.

3.11 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.

4. Site Operations

4.1 Site Inspection

The Trade Contractor will visit the site to determine all local conditions.

4.2 Supervision

The Trade Contractor shall provide a person in charge and all necessary supervision at all times during the execution of the works. Such supervision shall be given by persons having adequate knowledge of the operations to be carried out, of the methods and techniques to be employed, of the hazards likely to be encountered and of methods of preventing accidents: supervision shall be adequate to ensure the full and proper discharge of the Contractor's responsibilities under the Contract.

4.3 Nuisance and Working Hours

The work shall be carried out in a manner which will cause as little annoyance and inconvenience as possible to the owners of adjacent buildings and to the public. The Trade Contractor shall take all necessary precautions to prevent nuisance from smoke, dust, rubbish, noise and other causes.

The Trade Contractor shall as necessary, comply with all Local Authority restrictions on working hours and any other restrictions of this type contained within the Contract Documents.

4.4 Maintenance of Roads etc.

The Trade Contractor shall maintain and make good any damage to public or private roads, paths, kerbs or surrounding properties and shall pay any costs or charges in connection therewith.

4.5 Cleanliness of Roads

The Trade Contractor shall ensure that all vehicles leaving the site are clean and properly loaded and shall keep all approach roads free from dirt, mud and debris at all times.

4.6 Temporary Hoardings etc.

The Trade Contractor, unless noted elsewhere, shall provide close boarded temporary hoardings or fencing of adequate height, fans, planked walkways, guardrails, gantries and the like in accordance with the requirements of the Local or other Authority for protecting the public and occupants of adjoining premises and also for the proper execution of the works. These are to be designed and installed by competent persons.

Safety lighting shall be installed and maintained by the Contractor. All reasonable practical steps shall be taken to prevent the exposure of third parties to the risk of accident or health hazards caused by the work.

All temporary hoardings etc. shall be removed upon completion and cleared from the site. The surrounding area and adjacent surfaces etc shall be reinstated and left in a suitable condition as required by the Contract

4.7 Discharges into Drains

Adequate means of trapping cement, grease, fuel, oil and all other deleterious materials shall be included in temporary systems to prevent their being discharged into permanent drainage systems, including swales.

These measures are to be approved by the Contractor in advance.

4.8 Prevention of Pollution

The Trade Contractor is to take all reasonable precautions to ensure the effective protection of all streams and waterways against pollution arising from execution of the works.

4.9 Storage

Materials shall be stored such that they suffer no damage or deterioration which would impair their suitability or acceptability for their intended use.

4.10 Testing

Proposed arrangements for testing shall be approved in advance of construction. Testing may be carried out by an independent testing authority in an external laboratory, or by qualified contractors staff working in a suitably equipped laboratory on site.

4.11 Temporary Works

If required, the Trade Contractor shall submit his design criteria and detail drawings for temporary works to ST. Any comments made subsequently by ST shall not relieve the Trade Contractor of his responsibilities under the Contract.

The Trade Contractor shall obtain approval of ST for any aspect of his temporary works arrangements where loads are transferred to the permanent construction.

All temporary works shall be designed to an equivalent standard to the permanent works and agreed in writing with the Contractor. Materials and workmanship shall be as required by this Specification.

The Trade Contractor's attention is drawn to BS 5975: Code of Practice for Falsework.

4.12 Temporary Scaffolding

The Trade Contractor shall provide, erect, maintain, alter, dismantle and remove all temporary scaffolding required for the execution of the works.

4.13 Temporary Stability

The Trade Contractor shall ensure that trenches, earthworks and structures are maintained in a stable condition at all times during the execution of the works and shall provide all temporary supports etc that may be necessary to maintain this stability.

4.14 Overloading

The Trade Contractor shall not allow the completed, partially completed works, or existing structures to become overloaded or damaged due to the effect of construction materials, plant or equipment. Prior approval of ST shall be obtained before such items are introduced on to the works and the Trade Contractor shall make good any damage caused by such items. The loads for which the permanent work has been designed are indicated in the Skanska Technology Design Strategy document.

4.15 Protection

The Trade Contractor shall protect the works from damage due to inclement weather, and shall provide such protective devices or measures, including removal upon completion, as are necessary to ensure that the works are handed over in a satisfactory condition.

4.16 Waste Management

Wherever practical, waste materials and demolition materials shall be segregated for recycling on or off site.

4.17 Site Clearance

The Trade Contractor shall remove all loose rubbish and shall grub up and remove trees and shrubs with roots, to leave the site ready for the proposed main works excavation.

4.18 Existing Trees

The Trade Contractor shall comply with the requirements of all relevant tree preservation orders. Trees in excess of 300mm girth at 1m height shall not be removed except as directed by the S.O. Trees retained on site shall be protected by fencing from damage by machinery and equipment during the execution of the works. Protection shall be maintained and repaired as necessary until completion of the works.

4.19 Existing Services etc.

The Trade Contractor shall ascertain the location of all existing services, drains, sewers, etc within the site or where construction activities could impinge upon such services etc. The Trade Contractor shall plot accurately on a site layout drawing the location and identity of all such services etc including live services and their termination points, which drawing shall be kept available in the Trade Contractor's site office, and is to be provided at no cost to the Contractor upon his request.

Where services have been disconnected within the area of the site, the Trade Contractor shall mark the live ends of such services with marker posts and signs indicating the services and their depths. The route of all underground services through the site shall be marked by posts and signs indicating the services and their depths.

Prior to and during the execution of the works the Trade Contractor shall divert, uphold, maintain and protect all services, sewers, drains, overhead cables etc as required in agreement with the S.O. The Trade Contractor shall make good any damage and pay any costs or charges in connection therewith.

4.20 Superficial Obstructions

The Trade Contractor shall break up and remove any existing paved areas, underbuildings, foundations, disused manholes and concrete associated with disused drains or service ducts, which will affect piling, excavation or other works, and in any other locations as necessary.

4.21 Wells, Cesspools, Ponds and Ditches

Existing wells, cesspools, ponds and ditches shall be emptied, cleaned or desilted and back filled as directed by the S.O.

4.22 Removal of Rubbish and Cleaning

The Trade Contractor shall remove all rubbish and debris from the site as it accumulates. Rubbish shall not be burnt on site without the prior approval of the S.O. At completion the Trade Contractor shall clean down the whole of the works internally and externally. He shall also remove all equipment and surplus materials and leave the site safe and tidy.

4.23 Hazardous Materials

If, in the course of the Works, materials are discovered on site which are or could be defined as hazardous under the Control of Substances Hazardous to Health Regulations 2002 (COSHH) the Contractor shall obtain all necessary specialist advice and take such

measures as are necessary to ensure that the works may be continued in a manner which satisfies the requirements of COSHH and the Special Waste Regulations.

4.24 Records

Photographs shall be provided by the Trade Contractor if requested at daily/weekly/monthly intervals as appropriate in respect to the rate of progress. The photographs shall be taken from the same agreed locations on each occasion.

As appropriate, the Trade Contractor shall provide the necessary equipment to enable him to keep daily records of rainfall, temperature and wind velocity. The equipment shall be set up in appropriate locations i.e. rain and wind gauges in the open away from buildings and thermometers in the shade. The Trade Contractor shall keep a daily record of rainfall and of maximum, minimum and 8 a.m. temperatures. Alternatively a local weather station can be used to obtain records of rainfall and wind. These records shall be kept in the site office and be provided at no cost to the Contractor upon his request.

4.25 As-Built Drawings

As appropriate, the Trade Contractor shall provide, before the end of the contract period, a set of marked up drawings showing all “as constructed” features and dimensions. Site Clearance

4.26 Setting Out

4.26.1 Checking of Site Survey

The Trade Contractor shall verify the site boundaries, main levels and principal dimensions before work starts on the site.

4.26.2 Reference Points

The position of the new work will be identified precisely on the setting out drawing, in relation to at least three points on the site. These points will usually be survey stations established during the survey and left in permanent form. The Trade Contractor shall check and agree the inter-relationship of these points before commencing work.

4.26.3 Reference Grid

Unless agreed otherwise, the Trade Contractor shall establish with relation to the reference points described in Section 7.2, a site reference grid as a means of setting out the work and controlling its accuracy. Construction at all times shall have in the near vicinity suitable reference points and lines to enable accuracy to be checked readily. Reference points and lines shall be clearly marked showing their identity.

4.26.4 Datum Level

The levels of all new work shall be related to the datum and value identified on the setting out drawing. No other datum may be used.

4.26.5 Site Datum Level

From the datum level described in Section 7.4, the Trade Contractor shall establish within the area of the site, a site benchmark. The value of this benchmark shall be determined by not less than two closed levelling traverses from the specified level datum, which shall agree within 10mm, after which the mean value of both results shall be taken as the agreed value for the site benchmark. The site bench mark shall be located so as to be protected from damage or disturbance during construction but shall be accessible for use at all times: a steel stud or bolt set in a concrete block not less than one metre deep would be suitable, and the agreed value shall be clearly painted on the concrete block or in the vicinity.

4.26.6 Transferred Datum Levels

Each level of construction shall be controlled by a transferred benchmark established in a convenient position and with reference to the site benchmark.

4.26.7 Accuracy

The Trade Contractor shall employ staff and utilise equipment appropriate to the accuracy specified.

4.26.8 Cumulative Error

The Trade Contractor shall utilise setting out techniques which minimise the risk of cumulative errors being generated.

4.26.9 Existing Property

Where the site is not vacant e.g. where alterations are to be carried out to existing property, the arrangements indicated in Sections 7.1, 7.2, 7.3 and 7.4 may not apply in which case appropriate reference and level datum points will be indicated on the drawings.

4.27 Testing and Compliance

4.27.1 Independent Testing Specialists

Independent specialists may be appointed to carry out inspection and tests as directed by the S.O. or ST. These specialists shall be afforded the same facilities under this specification as the S.O.

4.27.2 Non-Compliance

All design; materials, components (including those damaged or distorted during transport, storage, handling, delivery or erection), workmanship and other matters, which are not in accordance with the requirements of this Specification, shall be rectified or removed and replaced as appropriate by the Trade Contractor at his expense.

5. Design Life

The design life of the various elements proposed are specified below. To provide additional focus when assessing these elements as part of scheduled maintenance, refer to BS7543:2015 "Guide to Durability of Buildings and Building Elements, Products and Components" for causes of deterioration that should be addressed.

Element Description	Design Life Years
Untreated softwood doors & windows, painted	20
Treated softwood windows, painted	20
Sealed double glazing window units	35
Exposed reinforced concrete	60
Galvanised wall ties	60
Sealants in external cladding	20
External paving	20
External paintwork	5
External wood stains and varnish	5
Untreated external timber, untreated (Western Red Cedar, European Larch, Douglas Fir, European Oak)	60
Treated external timber (Spruce, Fir, Pine, Thermally Modified, Lodgepole Pine, European Whitewood)	60
Rainwater goods	60

6. Performance Criteria

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.
- *Agrément 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: ± 10 mm.
- Floors to receive dry board/ panel work with little or no tolerance on thickness: ± 10 mm.
- Floors to receive fully bonded screeds/ toppings/ beds: ± 15 mm.
- Floors to receive unbonded or floating screeds/ beds: ± 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.

C40 CLEANING MASONRY/CONCRETE

110 SCOPE OF WORK

See Scope document

120 RELATED REPAIR AND REMEDIAL WORKS

Work to be carried out before cleaning work: Pointing to cracks and joints in masonry, as section C41.

142 REMOVAL OF FITTINGS

Timing: Before commencement of cleaning work.

Disturbance to surfaces: Minimise

Items for disposal: Nothing assumed

Items to be kept for reuse: Nothing assumed

160 PROTECTION

Surfaces not designated for cleaning: Prevent damage, including marking and staining.

Openings:

- Prevent ingress of water, cleaning agents, and detritus.
- Vents and grilles: Seek instructions before sealing up.

Temporary mechanical fastenings:

- In masonry: Locate in joints.
- In other surfaces: Seek instructions.

Additional protection: Not specified

175 CONTROL AND DISPOSAL OF WASH WATER AND DETRITUS

Disposal: Safely. Obtain approvals from relevant Authority

Control of wash water: Collect and divert to prevent ingress and damage to building fabric and adjacent areas

Above and below ground drainage systems: Keep free from detritus and maintain normal operation.

190 CLEANING GENERALLY

Operatives: Appropriately trained and experienced for each type of cleaning work.

Evidence of training: Submit on request.

Control of cleaning: Confine cleaning processes and materials to designated areas. Prevent wind drift.

Detritus: Remove regularly. Dispose of safely. Maintain a safe, clear site.

Monitoring: Frequently check results of cleaning compared to approved trial samples. If results established by trials are not achieved, seek instructions.

Modifications to cleaning methods and materials: Seek instructions.

MATERIALS

251 NEUTRAL SOAP

Contractors choice to CA approval.

256 WATER

Clean tap water only.

WORKMANSHIP

261 SEQUENCE OF OPERATIONS

- a) Inspection with CA.
- b) Recording.
- c) Preparation (including protection)
- d) Treatment.

272 PREPARATION FOR WATER WASHING

Protection surrounding surfaces that could be damaged by the subsequent treatment, including temporary masking of adjacent openings to avoid ingress of water into the interior of the building. Method of protection to be approved by the CA prior to commencement.

273 PREPARATION FOR WATER WASHING

Obtain CA approval to temporary protection. Carry out a trial cleaning (according to 274 – 279) to an area 1m² in allocation agreed with the CA and obtain approval to this prior to commencement. This trial sample will then be considered as a 'control' for the general standard of cleaning. Provide wind protection and control waste as necessary.

274 TREATMENT WATER WASHING

Use fine spray nozzles at least 300mm away from the wall face to provide intermittent (or pulsed), nebulous (or atomised) sprays of water playing on the masonry surface. The spray shall be controlled by handpumps. The washing interval will be controlled by hand pumps. The washing interval will be initially established during the trial and may be varied as the

washing is monitored but allow for ten second spray times interspersed by four-minute drying periods until the deposits are loosened.

276 TREATMENT WATER WASHING

Monitor the washing closely to ensure that enough water is applied to remove surface dirt but not saturated the masonry. Inform the CA if stone is becoming saturated or the dirt is not responding to brushing.

277 TREATMENT WATER WASHING

Continue the washing and brushing until the agreed level of cleanliness is achieved or the agreed cycle is complete.

278 TREATMENT WATER WASHING

Arrange for C.A to inspect when the above stage is reached. Receive further instructions.

279 TREATMENT WATER WASHING

When it is agreed by the CA that washing is complete, remove all temporary protection, plugging or masking and clear all waste debris.

C41 REPAIRING/RENOVATING/CONSERVING MASONRY

110 SCOPE OF WORK

See Scope document

125 REMOVAL OF FITTINGS/ FIXTURES

Timing: Before commencement of repair/cleaning work.

Disturbance to surfaces: Minimise

Items to be removed, and reinstated on completion of repair work: refer to Section C40 under requirements for removal prior to cleaning

Identification: Attach labels or otherwise mark items using durable, non-permanent means, to identify location and describe re-fixing instructions, where applicable

Treatment following removal: As schedule.

Storage: Protect against damage, and store until required.

Storage location: Submit proposals. – Reinstatement: Refit in original locations using original installation methods.

Items unsuitable or not required for reuse: Submit proposal

Disposal: Submit proposals

Building fabric and surfaces: Do not damage during removal and replacement of fittings/ fixtures

Removal: Minimize disturbance to surfaces.

130 REMOVAL OF PLANT GROWTHS FROM MASONRY

Plants, root systems and associated soil/ debris: Carefully remove from joints, voids and facework

Removal of roots: Where growths cannot be removed completely without disturbing masonry seek instructions

Unwanted plants close to masonry: Where removal of root system is not possible or desirable, cut through stem as close to the ground as possible. Remove bark from stump and apply herbicide paste. Leave stump to wither.

140A RECORD OF WORK

General: Maintain accurate records of work carried out to masonry as follows: Drawings marked up to show replacement stone, brickwork, repairs to fixings, areas of repointing, repairs to cracked stones.

Submission: At completion, electronic submission to be confirmed.

PROTECTION

Surfaces not designated for cleaning: Prevent damage, including marking and staining.

Openings:

- Prevent ingress of water, cleaning agents, and detritus.
- Vents and grilles: Seek instructions before sealing up.

Temporary mechanical fastenings:

- In stone: Locate in joints.
- In other surfaces: Seek instructions.

Additional protection: Not specified

CONTROL AND DISPOSAL OF WASH WATER AND DETRITUS

Disposal: Safely. Obtain approvals from relevant Authority

Control of wash water: Collect and divert to prevent ingress and damage to building fabric and adjacent areas

Above and below ground drainage systems: Keep free from detritus and maintain normal operation.

CLEANING GENERALLY

Operatives: Appropriately trained and experienced for each type of cleaning work.

Evidence of training: Submit on request.

Control of cleaning: Confine cleaning processes and materials to designated areas. Prevent wind drift.

Detritus: Remove regularly. Dispose of safely. Maintain a safe, clear site.

Monitoring: Frequently check results of cleaning compared to approved trial samples. If results established by trials are not achieved, seek instructions.

Modifications to cleaning methods and materials: Seek instructions.

MATERIALS

CLEANING

NEUTRAL SOAP

Contractors choice to CA approval.

256 WATER

Clean tap water only.

REPAIR

Material to match existing fabric – Trade contractor to submit proposal

WORKMANSHIP GENERALLY

CLEANING

SEQUENCE OF OPERATIONS

- a) Inspection with CA.
- b) Recording.
- c) Preparation (including protection)
- d) Treatment.

PREPARATION FOR WATER WASHING

Protection surrounding surfaces that could be damaged by the subsequent treatment, including temporary masking of adjacent openings to avoid ingress of water into the interior of the building. Method of protection to be approved by the CA prior to commencement.

PREPARATION FOR WATER WASHING

Obtain CA approval to temporary protection. Carry out a trial cleaning (according to 274 - 279) to an area 1m² in allocation agreed with the CA and obtain approval to this prior to commencement. this trial sample will then be considered as a 'control' for the general standard of cleaning. Provide wind protection and control waste as necessary.

274 TREATMENT WATER WASHING

Use fine spray nozzles at least 300mm away from the wall face to provide intermittent (or pulsed), nebulous (or atomised) sprays of water playing on the façade surface. The spray shall be controlled by handpumps. The washing interval will be controlled by hand pumps. The washing interval will be initially established during the trial and may be varied as the washing is monitored but allow for ten second spray times interspersed by four-minute drying periods until the deposits are loosened.

TREATMENT WATER WASHING

Monitor the washing closely to ensure that enough water is applied to remove surface dirt but not saturated the façade. Inform the CA if stone is becoming saturated or the dirt is not responding to brushing.

TREATMENT WATER WASHING

Continue the washing and brushing until the agreed level of cleanliness is achieved or the agreed cycle is complete.

Arrange for C.A to inspect when the above stage is reached. Receive further instructions.

When it is agreed by the CA that washing is complete, remove all temporary protection, plugging or masking and clear all waste debris.

REPAIRING

150 POWER TOOLS

Usage for removal of mortar: Permitted

155 PUTLOG SCAFFOLDING

Usage: Not Permitted

160 PROTECTION OF MASONRY UNITS AND MASONRY

Masonry units: Prevent overstressing during transit, storage, handling and fixing. Store on level bearers clear of the ground, separated with resilient spacers. Protect from adverse weather and keep dry. Prevent soiling, chipping and contamination. Lift units at designed lifting points, where provided

Stone/Masonry/Ornate detailing: Prevent damage, particularly to arrises, projecting features and delicate, friable surfaces. Prevent mortar/ grout splashes and other staining and marking on facework. Protect using suitable non-staining slats, boards, tarpaulins, etc. Remove protection on completion of the work

165 STRUCTURAL STABILITY

General: Maintain stability of masonry. Report defects, including signs of movement that are exposed or become apparent during the removal of masonry units.

170 DISTURBANCE TO RETAINED MASONRY

Retained masonry in the vicinity of repair works: Disturb as little as possible

Existing retained masonry: Do not cut or adjust to accommodate new or reused units

Retained loose masonry units and those vulnerable to movement during repair works: Prop or wedge so as to be firmly and correctly positioned

180 WORKMANSHIP

Skill and experience of site operatives: Appropriate for types of work on which they are employed. Documentary evidence: Submit on request

185 ADVERSE WEATHER

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

Air temperature: Do not bed masonry units or repoint:

- In cement gauged mortars when ambient air temperature is at or below 3°C and falling or unless it is at least 1°C and rising, unless mortar has a minimum temperature of 4°C when laid and the masonry is adequately protected.
- In hydraulic lime:sand mortars when ambient air temperature is at or below 5°C and falling or unless it is at least 3°C and rising.
- In non-hydraulic lime:sand mortars in cold weather, unless approval is given

Temperature of the work: Maintain above freezing until mortar has fully set

Rain, snow and dew: Protect masonry by covering during precipitation, and at all times when work is not proceeding

Hot conditions and drying winds: Prevent masonry from drying out rapidly

New mortar damaged by frost: Rake out and replace

190A CONTROL SAMPLES

General: Complete an area of each of the following types of work, and arrange for inspection before proceeding with the remainder:

- *Replacement face brickwork:* Replacement brickwork to be taken from salvaged materials wherever possible. Should this not be possible, submit alternative samples to C.A. for approval prior to any works on site.
- *Sample of repointing:* to ALL facades to be provided in an area of approximately 1m² in an area to be agreed with the C.A.
- *Replacement Stonework :* Submit full samples of stone proposed for replacement areas where existing stone is damaged beyond repair. Samples to be submitted to C.A. and to be submitted during Tender and prior to procurement and installation of any replacement stone.
- *Jointing of reinstated and replacement stonework :* in an area of approximately 1m² in an area to be agreed with the C.A.

Protection: Protect from adverse weather and damage.

195 SAND SAMPLES GENERALLY

Approval: Before placing order, submit for approval representative samples of:

- Mixed sample of proposed sand to be used in jointing of stonework
- Mixed sample of proposed sand to be used in repointing of stonework
- Mixed sample of proposed sand to be used in jointing of brickwork
- Mixed sample of proposed sand to be used in repointing of brickwork.

MATERIALS/ PRODUCTION/ ACCESSORIES

210 ADVANCE REGISTRATION

Material registered in advance by the Employer: Obtain from the supplier

Ordering: Supersede the Employer's registration and take over responsibility by an order to the supplier covering price, supply and delivery to suit the progress of the work.

215A MATERIAL SAMPLES

Inspection: Make arrangements for the inspection of representative samples of the following materials:

- Masonry/Stonework/Ornate detailing
- Sand for Jointing
- Mortar mix

Samples: Representative of the range of variation in appearance for each type of material to be matched

Appearance: Obtain approval before placing orders with suppliers or proceeding with production

Approved samples: Keep all samples on site for reference purposes. Protect from damage.

220 RECORDING PROFILES

Profiles: Take measurements from existing units, as instructed, to allow accurate matching of replacements

Recording in situ: If there are no suitable joints to allow use of inserts, seek instructions.

Drawings and templates: Prepare as necessary. Templates must be clearly and indelibly marked to identify use and location.

230 INSPECTION OF DRAWINGS, TEMPLATES, CASTS, ETC

Timing: Before starting production of units associated with the following items:

- Any carved feature stones requiring restoration or new work, or any full stones

Period of notice (minimum): Two weeks.

235 INSPECTION OF MASONRY/STONE UNITS

General: Before despatch to site, inspect and check completed units for: - Match with approved samples. - Compliance with drawings and specification.

Give notice: At appropriate stages in production to allow inspection of masonry units before delivery to site.

240A STONE

Types: To match existing

Sizes/ Special shapes: To match existing

Requirements: Free from vents, cracks, fissures, discolouration, or other defects which may adversely affect strength, durability or appearance. Thoroughly seasoned, dressed and worked in accordance with shop drawings prepared by the supplier.

250 STONE ORIENTATION

Orientation of natural bed:

In plain walling: Horizontal.

In projecting stones and copings: Vertical and perpendicular to wall face.

260A BRICKS

Types: To match existing

Sizes/ Special shapes: To match existing

265A SALVAGED/ SECOND-HAND BRICKS

Condition: Contractor to allow to prepare salvaged bricks for re-use as appropriate and select from salvaged stores as necessary. Bricks should be:

- Free from matter such as mortar, plaster, paint, bituminous materials and organic growths.
- Sound, clean and reasonably free from cracks and chipped arrises.

281A FIXINGS FOR ALL STONE AND BRICK AREAS AS APPROPRIATE

Procurement: Selected by the specialist contractor/ supplier. Submit details of proposed fixings

Material: Austenitic stainless steel

Type, size, strength and number: As necessary to resist all loads likely to occur during the life of the building,

285A JOINT REINFORCEMENT TO STONE AND BRICK REPAIRS AS NECESSARY

Manufacturer: Contractor to advise on locations required and submit details of proposed reinforcement

Product reference: Contractor to submit proposals

Material: Austenitic stainless steel.

Width: Bars to be at least 15mm from edge of leaf

Laying: To manufacturers details, but generally: On an even bed of mortar in a continuous strip with 225 mm laps at joints and full laps at angles. Keep back - 20 mm from face of external work, 12 mm back from face of internal work and finish mortar joint to normal thickness.

DISMANTLING/ REBUILDING

310A DISMANTLING MASONRY/STONE FOR REUSE

Masonry/Stone units to be reused: Remove carefully and in one piece.

Identification: Where masonry/stone is to be removed temporarily, identify each unit clearly and indelibly on concealed faces indicating their original positions in the walling can be readily identified.

Old mortar, dirt and organic growths: Clean off and leave masonry in a suitable condition for rebuilding.

321 REBUILD GENERALLY

Mortar: As section Z21

Mix: By analysis to match existing

Sand source/ type: By analysis to match existing

Fixings: Contractor to submit proposals after analysis and documentation of existing fixings during dismantling

Rebuilding: To match previous face and joint lines, joint widths and bonding and adequately bonded to retained work and backing masonry, etc

Joint surfaces: Dampen to control suction as necessary

Laying: On a full bed of mortar, and all joints filled

Exposed faces: Keep clear of mortar and grout

Joints: To match existing

Other requirements: Pointing/Jointing to match existing exactly.

REPLACEMENTS AND INSERTIONS

330A PREPARATION FOR REPLACEMENT MASONRY/STONE

Defective material: Carefully remove to the extent agreed. Do not disturb, damage or mark adjacent retained masonry

Existing metal fixings, frame members, etc: Report when exposed

Redundant metal fixings: Remove completely

Recesses: Thoroughly clean to remove loose material and leave joint surfaces in a suitable condition to receive replacement units. Protect from adverse weather

365 REPLACEMENT OF BRICKS REFER CLAUSE 260A AND 265A

Bricks: Salvaged or direct replacement

Mortar: As section Z21

Mix: By Analysis to match existing

Sand source/ type: By analysis to match existing

Fixings: Contractor to submit proposals

Joints: To match existing

Other requirements: Contractor to submit proposals for scope of replacement brickwork and full method statements

385 LAYING REPLACEMENT MASONRY UNITS

Exposed faces of new material: Keep to agreed face lines

Faces, angles and features: Align accurately. Set out carefully to ensure satisfactory junctions with existing masonry and maintain existing joint widths

Joint surfaces: Dampen to control suction as necessary

Laying units: On a full bed of mortar, all joints filled

Exposed faces: Keep clear of mortar and grout

390 GROUTING JOINTS

Grout mix: Contractor to submit proposals. By analysis to match existing where grouting already exists

Joints that cannot be fully filled with bedding mortar: Grout thoroughly around replacement masonry units

Grouting: Keep grout back from exposed face to allow for the depth of pointing, using an approved temporary sealing material. Prevent grout staining exposed face.

Mortar Repairs

510 PREPARATION FOR MORTAR REPAIRS

Repair area: Scribe area of masonry to be removed using straight horizontal and vertical lines parallel to joints. Where repair area abuts joints, maintain existing joint widths and do not bridge joints

Decayed masonry: Cut back carefully to a minimum depth of 20 mm to a sound background. Where the depth of removal exceeds 50 mm, seek instructions

Precautions: Do not weaken masonry by removing excessive material. Do not damage adjacent masonry

Top and vertical reveals of repair area: Undercut.

515 REINFORCEMENT FOR MORTAR REPAIRS

Material: Austenitic stainless steel, phosphor bronze or copper alloy wire, Contractor to submit proposals

Armatures: Form to suit profiles of mortar repair and provide effective reinforcement

Cover to reinforcement: Not less than 18 mm

Installation: Drill holes into background to receive reinforcement, and bond firmly with a suitable epoxy resin.

520 MORTAR REPAIRS AS NECESSARY

Undercoats: As section Z21

Mix: By Analysis to match existing

Sand source/ type: By analysis to match existing

Building up: In layers where necessary, each layer not exceeding 12 mm

Finishing coat: To match approved samples

Mix: By analysis to match existing

Sand source/ type: By analysis to match existing

Finished thickness: To match existing

Finish: To match existing

Reinforcement: By analysis to match existing.

540A APPLYING MORTAR

Background: Clean thoroughly to remove all dust and debris and dampen to control suction

Building up: In layers to specified thickness. Apply firmly and ensure good adhesion with no voids. Form a mechanical key to undercoats by combing or scratching to produce evenly spaced lines

Applying coats: Allow each layer to achieve an initial set before applying subsequent coats. Prevent each layer from drying out too rapidly by covering immediately with plastics sheeting and/ or dampening intermittently with clean water

Finishing mortar coat: Form accurately to required planes/ profiles and flush with adjacent masonry

555A FLOAT FINISH TO MORTAR REPAIRS

Finish: Use a wood float and/ or a felt faced float to give an even overall texture. Do not use steel floats.

CRACK REPAIRS/ TIES/ REINFORCEMENT

620A RESIN INJECTION OF CRACKS TO LOCATIONS AS NECESSARY & GENERALLY

Contractor to submit full method statements confirming all proposals for repairing cracks, fissures etc.

Resin injection system:

- *Manufacturer:* Contractor to submit proposals
- *Product reference:* Contractor to submit proposals

Preparation: Clean out cracks to remove loose debris, dust and dirt. Secure any loose masonry units

Exposed faces: Keep clean and free from stains

Injecting resin using methods recommended by resin system manufacturer to fully bond masonry

Completion: After resin has cured remove any temporary crack plugging material and temporary protective coatings

Pointing of cracks and injection holes: Point resultant repair to visually match the original stone finish, colour and texture as closely as possible.

630A TIES TO LOCATIONS AS NECESSARY & GENERALLY

Contractor to submit proposals on locations required following analysis of existing conditions

Tie system Manufacturer: Austenitic Stainless Steel. Contractor to submit proposals and subject to approval of Structural Engineer

Product reference: As above

Type/ diameter: Subject to particular requirements and as above

Grout: Contractor to submit proposals

Holes: Drill carefully and accurately to suit types and lengths of tie and positions shown on drawings. Clean thoroughly to remove drilling dust and debris

Adjacent masonry/ cavities: Prevent damage during drilling. Keep cavities behind any facings free from debris

Installation: Securely to form an effective repair

Expansion type anchor fixings: Set to the correct torque

Bonded ties: Thoroughly grouted

Ends of ties: Keep back from face of masonry to allow for making good

Exposed faces: Clean and free from grout/ mortar stains

Making good: To all surfaces to be carried out prior to final cleaning.

POINTING/ REPOINTING

810A PREPARATION FOR REPOINTING

Removing mortar: Work from the top of the wall downwards. Remove carefully and without damaging adjacent masonry, arrises or widening joints

Recess for repointing: Form a neat recess of depth not less than Contractor to submit proposals When mortar beyond this depth is loose and friable and/ or cavities are found seek instructions.

Dust and loose debris: Remove. Dampen joints to control suction as necessary

820 POINTING GENERALLY

Preparation of joints: As described in clause 810A

Mortar: As section Z21

Mix: By analysis to match existing. Contractor to submit proposals.

Sand source/ type: By analysis to match existing

Joints profile/ finish: To match existing. Refer to clauses 190,195 for samples required for approval

840 POINTING WITH TOOLS/ IRONS

General: Press mortar well into joints using pointing tools/ irons that fit into the joints, so that they are fully filled

Face of masonry: Keep clear of mortar. Use suitable temporary adhesive tape on each side of joints where necessary. Finish joints neatly

850 POINTING WITH INJECTION MORTAR

General: Inject mortar into joints so that they are fully filled with no voids

Face of masonry: Keep clear of mortar. Finish joints neatly

860 BRUSHED FINISH TO JOINTS

Timing: After initial mortar set has taken place remove laitance and excess fines by brushing, to give a coarse texture. Do not compact mortar.

C51 REPAIRING/RENOVATING/CONSERVING TIMBER

GENERAL

General quality

Cross-reference

General: Read with A90 General technical requirements.

PRODUCTS

Timber board flooring: Reuse existing floorboards

General: Free from decay, through splits and insect attack

Bottom of long edges: Chamfered/ grooved

EXECUTION

Generally

Methods of fixing and fasteners: As section Z20 where not specified.

Protection: Protect from dirt, stains and damage using suitable coverings and boards laid as the work proceeds.

Timber board linings, casings, etc.

Board fixing: To BS 1186-3. Access panels:

- Size and position: Agree before fixing boards.

Treated timber

Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

Fixing boards

Environmental conditions: Do not fix boards when ambient temperature is at or below 0°C, or above 30°C.

General: Fix boards securely to each support to give flat, true surfaces free from undulations, lipping, splits and protruding fastenings.

Timber movement: Position boards and fixings to prevent cupping, springing, excessive opening of joints and other defects.

Proud edges: Plane off.

Expansion provision

Expansion gaps:

- Edges of flooring: Parallel to lie of strips/ boards and 10 mm wide unless otherwise recommended by flooring manufacturer/ supplier.
- Ends of flooring: 10 mm wide.

Spacer blocks and debris: Removed before fixing skirtings/ cover fillets.

Intermediate expansion/ movement joints: Formed as recommended by flooring manufacturer/ supplier.

Finish to flooring and lining

Exposed fastener heads: Punched or set below surface and filled with stopping to match wood. Strips/ Boards: Sanded to give a clean, smooth and flush surface free from score marks.

DOOR/WINDOW REPAIR (INCLUDING SILLS)

110 INSPECTION

Purpose: To confirm nature and extent of repair/ renovation/ conservation work shown on drawings and/or described in survey reports and schedules of work.

Parties involved: Trade Contractor, C.A. and Structural Engineer.

Timing: At least 7 days before starting each section of work.

Instructions issued during inspection: To be incorporated into schedule and method statement & submitted for approval.

130 OPENING UP

Purpose: To reveal previously concealed areas of structure or fabric not recorded during initial surveys.

Extent: submit proposal as part of the reporting.

Timing: Give notice before starting the opening up.

Period of notice: to be agreed.

Retained building structure/ fabric: Do not damage or destabilize.

150 TIMBER PROCUREMENT

Timber (including timber for wood-based products): Obtained from well-managed forests and/ or plantations in accordance with:

- The laws governing forest management in the producer country or countries.
- International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).

Documentation: Provide either:

- Documentary evidence (that has been or can be independently verified) regarding the provenance of all timber supplied.
- Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.

Certification scheme: UK Timber Procurement Policy Category A evidence certification scheme.

Other evidence: None.

160 TIMBER SUPPLIER

Supplier: proposed FSC approved supplier or equal and approved..

STRUCTURAL REPAIRS/ ALTERATIONS

210 TIMBER SECTION STRENGTHENING - INTERNAL REINFORCEMENT

Reinforcement:

Type: Carbon steel dowels.

Number/ size: As required.

Spacers: Submit proposals.

Slots in existing members:

Location: Cut from bottom, centrally in beam width.

Size: To give minimum of 4 mm grout cover around and to end of reinforcement.

Grout: Epoxy resin.

221 TIMBER SECTION REPAIR

Defective timber: Cut out.

Reinforcement:

Type: Carbon steel dowels.

Number/ size: as required.

Spacers: Submit proposals.

Slots in existing members:

Location: Cut from top, centrally in beam width.

Size: To give minimum of 4 mm grout cover around and to end of reinforcement.

Replacement timber: to match existing.

Sectional profiles of mating surfaces: To match cut ends of existing timber.

Holes/ slots for reinforcement:

Location: To suit slots in existing member.

Size: to suit existing.

Grout: Epoxy resin.

230 MEMBER STRENGTHENING - EXTERNAL REINFORCEMENT

Reinforcement: to Structural Engineers recommendations.

Size: To Structural Engineers recommendations.

Fixing to existing timber: to structural engineers recommendations and submit proposals..

240 END REPAIRS - LAP

Defective timber: submit information as set out in section C52 and obtain approval prior to proceeding with works..

Lap member: to structural engineers recommendations.

Size: to structural engineers recommendations.

Fixing to existing timber: to structural engineers recommendations and submit proposals.

252 TIMBER SECTION REPAIR - EXTERNAL SPLICE

Defective timber: submit information as set out in section C52 and obtain approval prior to proceeding with works.

Cut out to clean, regular profile.

Replacement timber: as close 160 & to match existing.

Splice plates:

Material: Structural Engineers recommendations.

Size: Structural Engineers recommendations.

Fixing to existing timber: Structural Engineers recommendations and submit proposals.

260 JOINT STRENGTHENING - PLANAR INTERSECTIONS

Gusset plates:

Material: Structural Engineers recommendations.

Size: Structural Engineers recommendations.

Fixing to timber: Structural Engineers recommendations and submit proposals.

270 JOINT STRENGTHENING - RECTANGULAR INTERSECTIONS

Cleats: Structural Engineers recommendations.

Size: Structural Engineers recommendations.

Fixing to timber: Structural Engineers recommendations and submit proposals.

PRODUCTS

310 STRUCTURAL SOFTWOOD (GRADED DIRECT TO STRENGTH CLASS).

Grading standard: To BS 4978, BS EN 14081-1, or other national equivalent and so marked.

Strength class to BS EN 338: to Structural Engineer's recommendations.

Treatment:

Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8.

Design service life: 40 years.

Fire retardant treatment: Fire retardant impregnation to NBS section Z12 and Wood Protection Association Commodity Specification FR3, Type HR.

Moisture content (maximum) at time of installation: 24%.

Other requirements: none.

320 STRUCTURAL SOFTWOOD (STRENGTH CLASS NOT SPECIFIED)

Skirting, doors, cupboards

Species: to match existing.

Grading standard: To the appropriate standard or rules for the specified grade and so marked.

Grade: GS to BS 4978.

Treatment:

Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8.

Design service life: 40 years.

Fire retardant treatment: Fire retardant impregnation to NBS section Z12 and Wood Protection Association Commodity Specification FR3, Type HR.

Moisture content (maximum) at time of installation: 24%.

Other requirements: none.

330 STRUCTURAL HARDWOOD (GRADED DIRECT TO STRENGTH CLASS).

Grading standard: To BS 5756, BS EN 14081 or other national standard and so marked.

Strength class to BS EN 338: o Structural Engineer's recommendations.

Surface finish: Planed all round.

Treatment:

Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8.

Design service life: 40 years.

Fire retardant treatment: Fire retardant impregnation to NBS section Z12 and Wood Protection Association Commodity Specification FR3, Type HR.

Moisture content (maximum) at time of installation: As supplied.

Other requirements: submit proposals.

340 STRUCTURAL HARDWOOD (STRENGTH CLASS NOT SPECIFIED)

DOORS

Species: to match existing.

Grading standard: To the appropriate standard or rules for the specified grade and so marked.

Grade: GS to BS.

Surface finish: planed all round.

Treatment:

Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8.

Design service life: 40 years.

Fire retardant treatment: Fire retardant impregnation to NBS section Z12 and Wood Protection Association Commodity Specification FR3, Type HR.

Moisture content (maximum) at time of installation: As supplied.

Other requirements: submit proposals.

360 SOFTWOOD FOR JOINERY REPAIRS

Skirtings, doors, cupboards

Species: as clause 160 & to match existing. Submit proposals.

Quality: Generally to BS EN 942; free from decay and insect attack (except pinhole borers).

Appearance class: Class J2 for all exposed or paint finished timber & J30 or better for all other members.

Treatment: Fire retardant and preservative to NBS section Z12 and Wood Protection

Association Commodity Specification FR4. Service life 60 years.

Moisture content on delivery: 13-19% for external use & 6-10% for internal use.

370 HARDWOOD FOR JOINERY REPAIRS

Skirtings, doors, cupboards

Species: as Clause 160 & to match existing, Submit proposals.

Quality: Generally to BS EN 942; free from decay and insect attack (except pinhole borers).

Appearance class: Class 2 for all exposed or paint finished timber & J30 or better for all other members.

Treatment: Fire retardant and preservative to NBS section Z12 and Wood Protection

Association Commodity Specification FR4. Service life 60 years.

Moisture content on delivery: 13-19% for external use & 6-10% for internal use.

382 STRUCTURAL PLYWOOD

Standard: to the relevant national standards and quality control procedures specified in BS 5268-2, and so marked.

Type: Trade Contractor to submit for CA and Structural Engineer Review

Grade: Trade Contractor to submit for CA and Structural Engineer Review

Nominal thickness/ number of piles: Trade Contractor to submit for CA and Structural Engineer Review

Finish: Trade Contractor to submit for CA and Structural Engineer Review

Treatment: Trade Contractor to submit for CA and Structural Engineer Review

430 PROPRIETARY FRAMING ANCHORS AND CLEATS

Manufacturer: Trade Contractor to submit for CA and Structural Engineer Review

Product reference: Trade Contractor to submit for CA and Structural Engineer Review

Material/ finish: Galvanised UNO

Fasteners: Trade Contractor to submit for CA and Structural Engineer Review

460 CONNECTOR ASSEMBLIES

Connectors: To BS EN 912.

Type: Trade Contractor to submit for CA and Structural Engineer Review

Anti-corrosion treatment: Galvanised UNO

Bolts:

- Designation: to Structural Engineers recommendations.
- Diameter: To BS EN 1995 to suit type and size of connector.
- Finish as delivered: Galvanised or to Structural Engineers recommendations.

Nuts and washers: Materials, grades and finishes to suit bolts.

- Washer size:
- In contact with timber: Diameter: 2 times bolt diameter; thickness: 0.2 times bolt diameter.
- In contact with steel section/ plate (required when surface finish may be damaged by nut or bolt head rotating): To BS 4320.

470 NAILS FOR GENERAL USE

Standard: As section Z20.

Type: Trade Contractor to submit for CA and Structural Engineer Review

Material: Steel.

Strength (minimum): Trade Contractor to submit for CA and Structural Engineer Review

Finish as delivered: Galvanized UNO

480 SCREWS

Standard: As section Z20.

Material: Trade Contractor to submit for CA and Structural Engineer Review

Tensile strength (minimum): Trade Contractor to submit for CA and Structural Engineer Review

Finish as delivered: Galvanized UNO

490 COACH SCREWS

Standard: Trade Contractor to submit for CA and Structural Engineer Review

Material: Trade Contractor to submit for CA and Structural Engineer Review

Tensile strength (minimum): 550 N/mm²

Finish as delivered: Trade Contractor to submit for CA and Structural Engineer Review

540 RESIN GROUT/ ADHESIVE FOR SURFACE REPAIRS GENERALLY

Type: Epoxy Resin - Low shrinking and non-cracking.

Manufacturer: Trade Contractor to submit for CA and Structural Engineer Review

Product reference: Trade Contractor to submit for CA and Structural Engineer Review

EXECUTION

600 WORKMANSHIP

Skill and experience of site operatives: Appropriate for types of work on which they are employed.

Documentary evidence: Submit on request.

610 TEMPORARY SUPPORTS/ PROPPING

General: Provide adequate temporary support at each stage of repair work to prevent damage, overstressing or uncontrolled collapse of any part of the structure.

Bearings for temporary supports/ propping: Suitable to carry loads throughout repair operations.

620 PROTECTION OF TIMBER AND WOOD COMPONENTS BEFORE AND DURING INSTALLATION

Storage: Keep dry, under cover, clear of the ground and with good ventilation. Support sections/ components on regularly spaced, level bearers on a dry, firm base.

Handling: Do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.

630 MATERIAL SAMPLES

Representative samples of designated materials: Submit before placing orders.

Designated materials: all required hardwoods and softwoods.

640 PROTOTYPES

General: Prepare one of each of the following items and arrange for inspection before starting repetitive fabrication: to be agreed after the condition survey has been issued.

650 DIMENSIONS GENERALLY

Site dimensions: Take as necessary before starting fabrication.

Discrepancies with drawings: Report without delay and obtain instructions before proceeding.

660 CROSS SECTION DIMENSIONS OF STRUCTURAL SOFTWOOD AND HARDWOOD

Dimensions: Dimensions in this specification and shown on drawings are target sizes as defined in BS EN 336.

Tolerances: The tolerance indicators (T1) and (T2) specify the maximum permitted deviations from target sizes as stated in BS EN 336, clause 4.3:

Tolerance class 1 (T1) for sawn surfaces.

Tolerance class 2 (T2) for further processed surfaces.

665 CROSS SECTION DIMENSIONS OF NON-STRUCTURAL SOFTWOOD

Dimensions: Dimensions in this specification and shown on drawings are finished sizes.

Maximum permitted deviations from finished sizes: As stated in BS EN 1313-1, clause 6 for sawn sections.

670 CROSS SECTION DIMENSIONS OF NON-STRUCTURAL HARDWOOD

Bow, spring, twist and cup: Not greater than the limits set down in BS 4978 or BS EN 14081-1 for softwood, or BS 5756 for hardwood.

690 PROCESSING TREATED TIMBER

Cutting and machining: Carry out as much as possible before treatment.

Extensively processed timber: Retreat timber sawn lengthways, thicknesses, planed, ploughed, etc.

Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

710 REUSE OF TIMBER SECTIONS/ WOOD COMPONENTS

Sections/ components scheduled to be removed but not reused in existing locations: Agree extent of retention for reuse elsewhere in the works.

Treatment following removal: as specified C20.

Storage: Protect against damage, and store until required.

Storage location: as stated in Subcontractors method statement.

Reuse: Adapt sections/ components, as necessary, and install in agreed locations.

720 TEMPORARY REMOVAL AND REINSTATEMENT OF FITTINGS/ FIXTURES

Items to be removed, and reinstated on completion of repair work:

Identification: Attach labels or otherwise mark items using durable, non-permanent means, to identify location and re-fixing instructions, where applicable.

Treatment following removal: as specified in C20.

Storage: Protect against damage, and store until required.

Storage location: as stated in Subcontractors method statement.

Reinstatement: Refit in original locations using original installation methods.

Items unsuitable or not required for reuse: Obtain instructions regarding disposal.

730 PARTIAL REMOVAL OF EXISTING DECORATIVE/ PROTECTIVE FINISH ROOF AREAS

Extent: Remove minimum necessary to expose damaged or decayed wood. Feather the edge of remaining coating around repair site.

Method: submit proposals.

740 REMOVAL OF EXISTING DECORATIVE/ PROTECTIVE FINISH

Skirting, windows cills and door frames

Extent: Remove completely back to bare wood.

Method: Contractor's choice.

750 CLEANING DIRTY OR STAINED WOOD

Generally: Scrub with neutral pH soap and clean, warm water.

Old varnish: Remove using mixture of turpentine (not turpentine substitute) and acetone in proportions determined by experiment, followed by washing down.

780 REPAIR OF DISTORTED TIMBER MEMBERS

Generally: Repair to shape that member has assumed.

760 REPAIR OF MEMBERS - CUTTING OUT MEMBERS

Extent of timber removal: Cut out full cross section of member where wood is defective or decayed, plus 300 mm of sound wood.

Distance from face of support to cut end of existing timber: Obtain instructions if dimension exceeds maximum shown on drawing.

Joint profile: to suit location.

812 USE OF TOOTHED PLATE CONNECTORS

Between timber section: to Structural Engineer's recommendations.

Between timber and steel: Single sided.

820 MAKING CONNECTION JOINTS

Connector location: Where not otherwise shown, spacings, end and edge distances are to be not less than Standard values to BS EN 5268-2, section 6.

Bolt hole: As close as practical to nominal diameter of bolt, and not more than 2mm greater.

Centres of bolt holes: Not more than 2 mm from positions shown on drawings.

Assembly: Do not crush timber, deform washers or overstress bolts.

830 CRITICAL DIMENSIONS FOR FASTENERS

Critical dimensions: to Structural Engineers recommendations.

840 FIXING FRAMING ANCHORS AND CLEATS

Before installation: Submit details if joint geometry prevents installation to manufacturer's recommendations.

Installation: Secure using not less than number of fasteners recommended by manufacturer.

852 ADHESIVE JOINTS

Moisture content of sections to be joined: Within 5% of equilibrium moisture content for conditions of service, and differing from each other by not more than 3%

Surfaces to be bonded; Close fitting, structurally sound, dry and free from contamination by dirt, dust, grease or other deleterious substances.

860 MOISTURE CONTENT CHECKING

Procedure: When instructed, check moisture content of timber sections with an approved electrical moisture meter.

Test results: Keep records of all tests. If moisture content falls outside specified range, obtain instructions.

870 MOISTURE CONTENT TESTING

Procedure: When instructed, test timber sections with an electrical moisture meter with deep probes, that has been carefully calibrated against oven drying tests or otherwise guaranteed by an independent testing authority.

Test sample: Test 5% but not less than 10 lengths of each cross-section in the centre of the length.

Test results: 90% of values obtained to be within the specified range. Provide records of all tests.

COMPLETION

910 MECHANICALLY FASTENED JOINTS

General: Inspect accessible bolted, coach-screwed and timber pegged joints and tighten fasteners if necessary.

Timing: On Completion and at end of Defects Liability Period or Rectification Period.

H62 NATURAL SLATING

GENERAL

General quality

Cross-reference

General: Read with A90 General technical requirements.

Preservative treatment: Read with Z12 Preservative and fire retardant treatment.

Mortar: Read with Z21 Mortars.

PRODUCTS

Slates

Natural slates: To BS EN 12326.

Width (minimum): The greater of half the length or 150 mm.

Battens, counterbattens and ridge/ hip fixing battens

Timber: To BS 5534, clause 4.12.1.

Type: Sawn softwood (imported Whitewood, Redwood, Spruce/ Pine/ Fir (Canadian/ USA) or Southern Pine (USA) or British grown Corsican Pine, Scots Pine or Sitka Spruce).

Permissible characteristics and defects limits: Not to exceed limits in BS 5534, annex C.

Moisture content at time of fixing and covering: 22% (maximum).

Preservative treatment: To British Wood Preserving and Damp-proofing Association Commodity Specification C8.

Fasteners

Nails:

Aluminium nails: To BS 1202-3.

Copper nails: To BS 1202-2.

Steel nails: To BS 1202-1 or BS EN 10230-1 as appropriate for specified type.

Hip irons

Standard: To BS 5534, clause 4.16.1.

Material: Galvanized steel.

Mortar bedding and pointing

Mortar: 1:3 cement:sand.

Plasticizing admixtures: Permitted.

Bond strength: Provide resistance to uplift to BS 5534.

Slating underlay

Reinforced bitumen sheet: To BS 747 or BS EN 13707 and BS 5534, Annex A.

Breathable membrane: Agrément certified.

EXECUTION

Slating generally

Standard: To applicable parts of BS 5534.

General: Fix slating and accessories to make the whole sound and weathertight at the earliest opportunity.

Setting out: To true lines and regular appearance, with neat fit at edges, junctions and features.

Fixings for accessories: As recommended by manufacturer.

Gutters and pipes: Keep free of debris. Clean out at completion.

Removing existing natural slating

General: Carefully remove slates, battens, underlay, etc. with minimum disturbance of adjacent retained slating.

Underlay

Handling: Do not tear or puncture.

Laying: Maintain consistent tautness.

Vertical laps: 100 mm wide (minimum), coinciding with supports and securely fixed.

Fixing: Fix with galvanized steel, copper or aluminium 20 x 3 mm extra large clout head nails.

At penetrations of pipes and components: Select from:

Proprietary underlay seals or

Cut underlay accurately and turn flanges up to give a watertight fit.

Ventilation paths: Do not obstruct.

Counterbattens

Fixing:

On rigid sarking: Through rigid sarking into rafters at 300 mm (maximum) centres.

On rafters: Into rafters at 300 mm (maximum) centres.

On masonry: Fixing centres 400 mm (maximum) in straight vertical lines. Align on adjacent areas.

Battens

Setting out: Align parallel to ridge in straight horizontal lines to gauge of the slates. Align on adjacent areas.

Batten length (minimum): Sufficient to span over three supports.

Joints in length: Square cut, butt centrally on supports. Joints must not occur more than once in any group of four battens on any one support.

Unsupported underlay laps between battens: Provide additional battens.

Fixing: Fix each batten to each support. Splay fix at joints in length.

Slate fixing

Setting out: Align tails. Lay with an even overall appearance, with slightly open (maximum 5 mm) butt joints.

Headlaps and sidelaps (minimum): To BS 5534. Suit slate size, roof pitch and exposure.

Thickness: Consistent in any one course. Lay with thicker end as tail.

Ends of courses: Maintain bond. Provide extra wide slates as necessary.

Top course: Head-nail short course to maintain gauge.

Cut slates: As large as possible.

Fixing: Two nails to each slate. Centre fix through countersunk holes 20–25 mm from side edges.

Mortar bedding and pointing

Weather: Do not use in wet or frosty weather or when such weather is imminent.

Concrete and clay tile accessories to be bedded: Wet and allow surface water to drain off before fixing.

Finish: Finish neatly as work proceeds. Remove residue.

Edges, junctions and features

Fittings and accessories: Proprietary, not improvised.

Exposed items: Match slate colour and finish.

Cut slates: Only where necessary. Give neat, close fitting joints and straight, clean edges.

Fixing: Fix edge slates and fittings securely to neat, true lines.

Flashings: Fix with or immediately after the slating. Dress down neatly.

Fire separating walls

Separating wall: Completely fill space between top of wall and underside of tiles with mineral wool quilt to provide fire stopping.

Boxed eaves: Completely seal air paths in plane of separating wall with wire reinforced mineral wool, 50 mm thick (minimum), fixed to rafters. Cut carefully to shape to provide fire stopping.

Ventilated eaves

Combined eaves fascia grille/ ventilator tray: Fix to carry underlay, form drip into gutter and provide free passage of air over insulation..

Fascia grille and/ or separate ventilation tray: Fix to provide free passage of air over insulation.

Underlay support: Continuous to prevent water retaining troughs.

Gutter: Dress underlay or underlay support tray to form drip into gutter.

Undercourse and first course slates: Fix with tails projecting 50 mm over gutter or to centre line of gutter, whichever dimension is less.

Unventilated eaves

Gutter: Dress underlay or underlay support tray to form drip into gutter.

Underlay support: Continuous to prevent water retaining troughs.

Undercourse and first course tiles: Fix with tails projecting 50 mm over gutter or to centre of gutter, whichever dimension is less.

Mortar bedded verge with bedded undercloak

Underlay: Carry 50 mm onto outer leaf of gable wall and bed in mortar.

Undercloak of slates:

Bedding: Mortar identical to that used in gable walling.

Position: Level with underside of slating battens. Slope away from wall. Project 38–50 mm beyond face of wall.

Slating battens: Carry over undercloak and finish 100 mm from verge edge.

Verge slates:

Bedding: Flush with undercloak on 75 mm wide bed of mortar.

Fixing: Do not displace or crack mortar.

Mortar bedded verge with nailed undercloak

Underlay: Carry over full width of verge.

Undercloak: Matching natural slates:

Position: Over underlay, level with underside of tiling battens, sloping towards verge.

Projection beyond face of bargeboard/ fascia: 38–50 mm.

Fixing: Nailed.

Slating battens: Carry over undercloak and finish 100 mm from verge edge.

Verge slates:

Bedding: Flush with undercloak on 75 mm wide bed of mortar.

Fixing: Do not displace or crack mortar.

Hips

Underlay: Lay courses over hip. Overlap 150 mm (minimum).

Mitred hips:

Laying: Cut extra wide slates to form a straight, close mitred junction.

Soakers: Interleave with mitred slates. Fix by turning down over head of mitred slates.

Mortar bedded hips:

Cut and fix slates closely at junction.

Bedding: On mortar, continuous to edges, and solid to joints. Finish joints neatly and flush.

Fixing: Where rigid masonry walls support or abut hip, secure hip tiles within 900 mm of such walls to hip rafters or supplementary hip battens with nails/ wire ties or screws.

Bottom hip tiles: Shape neatly to align with corner of eaves.

Hip irons: Fix to hip rafter or hip batten with (minimum) two zinc coated steel screws.

Valleys

GRP valleys:

Underlay: Lay as recommended by GRP valley manufacturer.

Roof slates: Cut extra wide slates neatly. Fix each side of valley gap.

Metal valleys:

- Underlay: Cut to rake. Dress over tilting fillets to lap onto metal valley. Do not lay underlay under metal.
- Roof slates: Cut extra wide slates neatly. Fix each side of valley gap.

Mitred valleys:

- Underlay: Cover valley with a strip of underlay 600 mm (minimum) wide. Underlap general underlay.
- Construction: Cut extra wide slates. Fix to form a straight, weathertight, close mitred junction.
- Soakers: Interleave with mitred slates. Fix by turning down over the head of mitred slates.

Abutments

Underlay: Turn up 100 mm (minimum) at abutments.

Side abutments:

- Abutment slates: Cut as necessary Fix close to abutments.
- Soakers: Interleave with abutment slates. Fix by turning down over head of abutment slates.
- Top edge abutments:
- Maintaining headlap: Finish slating with a head-nailed short course.
- Top course slates: Fix close to abutment.
- Ventilated abutments: Provide air gap at abutment as recommended by ventilator manufacturer.

Roof windows

Underlay: Turn up 100 mm (minimum) against window surround. Cover with integral flashing/ soakers all round.

Roof slates: Cut as necessary. Fix closely all round.

Ridges

Maintaining headlap: Finish slating with head-nailed short course.

Dry ridge:

- Underlay: Lay courses over ridge. Overlap 150 mm (minimum).
- Dry ventilated tile ridge:
- Underlay: Provide air gap at apex.

- Mortar bedded tile ridge:
- Underlay: Lay from one side of ridge over apex to overlap top course of underlay at other side by 150 mm (minimum).
- Bedding: On mortar, continuous to edges, and solid to joints. Finish joints neatly and flush.

Mono-ridges

Dry mono-ridge:

Underlay: Lay 100 mm (minimum) over apex.

Dry ventilated mono-ridge:

Underlay: Provide air gap at apex.

Mortar bedded mono-ridges:

- Underlay: Lay 100 mm (minimum) over apex.
- Bedding: On mortar, continuous to sloping edges and solid to joints
- Fixing: Secure vertical faces with screws/ nails.

Snowguards

Brackets: Fix to rafters on a line 100–150 mm above the roof edge.

Timber snowboard: Fix to brackets with 50 mm clearance over roof surface.

Slate work: Cut slates as necessary. Fit flashing and dress over roof finish.

Vertical slating edges and junctions

Bottom edges:

- Timber fillets: Fix to base. Tilt eaves course slates into correct vertical plane.
- Underlay: Dress over fillet.
- Flashings: Dress over fillet. Underlap underlay. Fix behind the bottom slating batten.
- Slates: Neatly align tails.

Top edges:

- Maintaining headlap: Finish slating with a head-nailed short course under abutment.
- Flashing: Fix under abutment. Dress down 150 mm (minimum) over top course of slates.
- Side abutments:
- Abutment wall: Chase. Insert step flashing.
- Flashing: Return 75 mm (minimum) behind slating. Overlap underlay and battens. Turn back to form a vertical welt.
- Slates: Cut. Fix neatly to abutment.

Angles with soakers:

- Construction: Cut slates. Interleave with soakers. Fix to form a straight, weathertight, close mitred junction.
- Soakers: Nail to battens at top edge.
- Junctions with roof verge:
- Additional slating battens: Fix parallel to and below verge.
- End slates: Splay cut extra wide slates at ends of courses to angle of verge rake. Fix to batten with cut edge parallel to and below verge.
- Adjacent slates: Cut to fit neatly

L20 DOORS

SCOPE OF WORK

Upon completion of fire door survey and confirmation of non-compliance. Existing Original panelled fire doors are to be upgraded and not replaced by using intumescent veneers and paints (e.g. Envirograf or Sealmaster).

GENERAL

General quality

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.

110 EVIDENCE OF PERFORMANCE

Certification: Provide independently certified evidence that all incorporated components comply with specified performance requirements.

112 TIMBER PROCUREMENT

Timber (including timber for wood-based products): Obtain from well managed forests and/ or plantations in accordance with: The laws governing forest management in the producer country or countries. International agreements such as the 'Convention on International Trade in Endangered Species of wild fauna and flora (CITES)'.

Documentation: Provide either:

- Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
- Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
- Certification scheme: FSC.

150 SITE DIMENSIONS

Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.

Designated items: All door sets which are intended to fit into existing openings.

170 CONTROL SAMPLES

Procedure:

- Finalize component details.
- Fabricate one of each of the following designated items as part of the quantity required for the project.
- Obtain approval of appearance and quality before proceeding with manufacture of the remaining quantity.

Designated items:

- Weather stripping to existing loading doors.
- Pair of facsimile timber boarded doors

PRODUCTS

272 REPAIRS TO EXISTING EXTERNAL TIMBER DOORS

Overview: This clause covers remedial joinery and repair work to existing external doors and Fire Station doors, based upon a survey of doors and classification of indicative Repair Codes as follows: Contractors to survey existing doors and advise the CA if additional repairs are considered necessary.

Repair Code 1

No timber repairs identified.

Remove existing ironmongery and refurbish fittings to be retained.

- Prepare door leafs for redecoration as M60/123
- Assume that Code 1 works may be carried out with doors retained in-situ

Repair Code 2

Superficial repairs. Allow for the following works:

- All works included in Repair Code 1
- Cut out non-structural surface defects and piece-in new wood, plane flush and prime.
- Remove loose material from open or cracked joints, fill using and prime for decoration.
- Assume that Code 2 works may be carried out with doors retained in-situ

Repair Code 3

Significant repairs. Allow for the following works:

- All works included in Repair Codes 1 and 2
- Replace damaged or missing beads to match existing profiles.
- Replace damaged or missing glazing bars

- Remove plywood gusset panels.
- Cut out damaged or decayed sections of timber back to sound wood, typically to base of stiles, scarf in new wood to match existing profiles and prime for decoration.
- Replace split, or cupped boarding with new sections to match existing profiles and prime for decoration
- Replace damaged or missing weatherboards to loading bay doors

Repair Code 4

Major repairs. Allow for the following works:

- All works included in Repair Codes 1,2, and 3
- Replacement of primary members where rotten or badly damaged with new timber sections.
- Reform, reassemble and re-glue joints where frames have twisted or dropped out of square.
- Undertake alterations/modifications to leaves as described in the schedules.

Removal of and re-hanging of doors:

Where doors are to be removed first label all door leafs and hinges.

Remove doors from their openings, either by lifting off by unbolting, or unscrewing hinges.

During the period where leaves are removed store flat on timber plates to avoid distortion of the frames.

All existing ironmongery and door furniture removed to be clearly labelled with the door ref number and kept together in bags for refurbishment and re-fixing.

Once repairs are complete re-fix existing doors in original positions using new fixings.

Adjust door leaves, plane meeting surfaces where necessary and lubricate hinges to ensure ease of operation.

Workmanship:

Undertake repairs specified in this clause using well-seasoned timber of species and characteristics to match the existing. Do not use timber with shakes, splits, large knots or other defects.

Cut all joints square to line and plane, dismantling and adjusting the meeting surfaces as necessary to ensure a close fit. Ensure that new timbers are cut and trimmed to old including and deformation of the existing member.

Prime surfaces to be jointed or filled with Sikken's Componex Primer, and fully bed in new wood using Sikken's Componex WR Filler and non-ferrous screws.

Fill surface cracks and open joints using Sikken's Componex WR Filler following application of Componex Primer.

273 DOOR MODIFICATIONS – FIRE UPGRADING OF EXISTING INTERNAL DOORS OPENING ONTO ESCAPE ROUTES. UPGRADE APPLIES TO ORIGINAL PANELLED FIRE DOORS.

Overview: This clause covers upgrading the fire performance of existing historic timber door sets, including doors with glazed over-panels, by adding intumescent smoke seals to doors / frames together with an intumescent system finish to the risk side of the door. Existing panelled fire doors must also be upgraded. Clear fire resistant glazing (7mm Pilkington Pyrodor Plus) to any glazed panels is also required to achieve 30min FRset in 10x2mm Intumescent material both sides of beading.

Manufacturer: Submit to CA for review

System Reference: -

Product: Intumescent coating to upgrade doors and panelled doors to fire rated doors. Use Envirograf Product 42 HW02E intumescent paint on risk side of door (room side – see manufacturer's guidance) for 30mins fire protection. This is a clear coating to retain the original colour of the doors.

Use Envirograf Product 69 surface-mounted intumescent fire and smoke seal strips around all fire doors. Ensure a minimum 3mm-3.5mm gap exists between door and frame, down the closing stile and across the head.

For fire doors with penetrations, use Envirograf Product 38 Intumescent Card/Veneer in conjunction with Product 42 Intumescent Paint to repair penetrations in fire doors. Select wood veneer finish providing closest match to existing door or alternatively paint or varnish fitted product as per manufacturer's guidance.

For hinge, lock and door closer fire protection use Envirograf Product 71 Intumescent Sheet to ensure the existing ironmongery is protected. Doors with less than 3 hinges should be upgraded using Envirograf Product 71 set of 3 self-closing hinges.

Notes: To provide 1/2hr fire protection system to be applied fully in accordance with manufacturer's instructions

Preparation: As per manufacturer's guidance. Note, where lead paints may be present, take preventative measures accordingly.

Overview: This clause covers remedial joinery and repair work to existing internal timber doors including panelled doors, panelled fire doors and part glazed based upon a survey of doors and classification of indicative Repair Codes as follows: Contractors to survey existing doors and advise the CA if additional repairs are considered necessary.

NOTE: Fire upgrades covered by Clause 273.

Repair Code 1

- No. of timber repairs identified. Remove existing ironmongery and refurbish fittings to be retained
- Prepare door leafs for redecoration as M60/150
- Assume that Code 1 works may be carried out with doors retained in-situ
- For fire door upgrades refer to clause 273 above

Repair Code 2

Superficial repairs. Allow for the following works:

- All works included in Repair Code 1-Cut out non-structural surface defects and piece-in new wood, plane flush and prime.-Remove loose material from open or cracked joints, fill using and prime for decoration.
- Assume that Code 2 works may be carried out with doors retained in-situ
- For fire door upgrades refer to clause 273 above

Repair Code 3

Significant repairs. Allow for the following works:

- All works included in Repair Codes 1 and 2-Replace damaged or missing beads to match existing profiles.
- Replace damaged or missing glazing bars-Replace Glass where noted.-Remove plywood gusset panels.Cut out damaged or decayed sections of timber back to sound wood, typically to base of stiles, scarf in new wood to match existing profiles and prime for decoration.
- Replace split, or cupped boarding with new sections to match existing profiles and prime for decoration
- For fire door upgrades refer to clause 273 above

Repair Code 4

Major repairs. Allow for the following works:

- All works included in Repair Codes 1, 2, and 3
- Replacement of primary members where badly damaged with new timber sections.
- Reform, reassemble and re-glue joints where frames have twisted or dropped out of square.
- Undertake alterations/modifications to leaves as described in the schedules.
- For fire door upgrades refer to clause 273 above

Removal of and re-hanging of doors:

- Where doors are to be removed first label all door leafs and hinges.

- Remove doors from their openings, either by lifting off by unbolting, or unscrewing hinges.
- During the period where leaves are removed store flat on timber plates to avoid distortion of the frames.
- All existing ironmongery and door furniture removed to be clearly labelled with the door ref number and kept together in bags for refurbishment and refixing.
- Once repairs are complete re-fix existing doors in original positions using new or existing fixings.
- Adjust door leaves, plane meeting surfaces where necessary and lubricate hinges to ensure ease of operation.

Workmanship:

Undertake repairs specified in this clause using well-seasoned timber of species and characteristics to match the existing. Do not use timber with shakes, splits, large knots or other defects.

Cut all joints square to line and plane, dismantling and adjusting the meeting surfaces as necessary to ensure a close fit. Ensure that new timbers are cut and trimmed to old including and deformation of the existing member.

Prime surfaces to be jointed or filled with suitable primer, and fully bed in new wood using appropriate Filler and non-ferrous screws.

Fill surface cracks and open joints using appropriate

Filler following application of suitable Primer.

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.

Metric internal and external wood doorsets, door leaves and frames

Coordinated sizes: To BS 4787.

Wood framed panel doors

Timber quality: To BS EN 942.

Wood preservative treatment

Service life: Not less than 30 years.

External hardwood doors and frames: BWPDA commodity specification C10.

Adhesives for wood doors and frames

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

COMPONENTS

400 BESPOKE INTERNAL WOOD PANELLED DOORS & FRAMES

Materials: Generally to BS EN 942.

- Species: Joinery quality softwood to BS 942 table NA1 –or as required to achieve fire rating.
- Minimum density 450kg/m³
- Appearance class: Replica to match adjacent doors.

Thickness: to match adjacent doors.

Assembly:

- Adhesive: To be Urea Formaldehyde adhesive (e.g. Cascamite or Resorcinol)
- Joinery workmanship: As section Z10.
- Door leaf framing to match adjacent doors.
- Accuracy: To BS 4787-1.

Preservative treatment: Desired service life 30 years .

Moisture content on delivery: 9-13%.

Finish as delivered: Primed for site decoration

Smoke seals –none

Undercuts: to match adjacent doors.

Frames:

Materials: Generally to BS EN 942.

- Species: Joinery quality softwood to BS 942 table NA1 or as required to meet fire resistance.
- Minimum density 450kg/m³
- Appearance class: J20 -J30.
- Thickness –to match adjacent doors.

Assembly:

- Adhesive: To be Urea Formaldehyde adhesive (e.g. Cascamite or Resorcinol)
- Joinery workmanship: to match adjacent doors.

Preservative treatment: Desired service life –30 years.

Moisture content on delivery: 9-13 % .

Finish as delivered: primed for site decoration.

Fixing: Plugged and screwed into surrounds.-

Architraves

Painted one or two piece sw architraves sizes as indicated on details.

Moisture content on delivery: 9-13 % .

Finish as delivered: primed for site decoration .

Fixing: Plugged and screwed into surrounds.

440 FIRE RATED DOORSETS TO PROTECTED ESCAPE ROUTES + PLANT SPACES ETC

Materials: Generally to BS EN 942.

Performance: min. FD 30 S.

The door and frame assembly should perform as a unit in accordance with BS 476 Part 22 to achieve the required fire resistance

Door leafs:

- Core: 44mm min. 30 min FR rated solid core.
- Facings: pre-finished MDF both sides.
- Lippings: Min 6mm square hardwood to long edges.
- Finish as delivered: Spray finished as M60/112

Frame and architraves:

- Wood species: Hardwood –(to achieve fire resistance)
- Appearance class to BS EN 942: J30 high quality joinery
- Finish as delivered: Pre primed for site decoration .

Preservative treatment: N/A.

Glazing/ Infill details: As existing

- Manifestation: As existing unless specified otherwise
- Beading: Hardwood beads/stops to achieve fire performance.

Moisture content on delivery: 9-13 %.

Ironmongery: As existing. For hinge, lock and door closer fire protection use Envirograf Product 71 Intumescent Sheet to ensure the existing ironmongery is protected. Doors with less than 3 hinges should be upgraded using Envirograf Product 71 set of 3 self-closing hinges.

Perimeter seals: Intumescent and smoke seals as required to meet fire rating. Use Envirograf Product 69 surface-mounted intumescent fire and smoke seal strips around all fire doors. Ensure a minimum 3mm-3.5mm gap exists between door and frame, down the closing stile and across the head.

Thermal performance (U-value maximum): N/A.

Fixing: Screwed and plugged with recessed timber inserts.

Other requirements: Submit test data/evidence of fire performance.

EXECUTION

710 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.

730 PRIMING/ SEALING

Wood surfaces inaccessible after installation: -Primed or sealed as specified before fixing components.

740 CORROSION PROTECTION

Surfaces to be protected: All new steel components/units

Protective coating: Hot dipped galvanised or a suitable marine tested powder coating with min 15 year warranty. Supplier to provide details.

750 FIXING DOORSETS

Timing: After associated rooms have been made weathertight and the work of wet trades is finished and dried out.

760 BUILDING IN

General: Not permitted unless indicated on drawings.

770 DAMP PROOF COURSES ASSOCIATED WITH BUILT IN WOOD FRAMES

Method of fixing: To backs of frames using galvanized clout nails.

780 DAMP PROOF COURSES IN PREPARED OPENINGS

Location: Correctly positioned in relation to door frames. Do not displace during fixing operations.

790 FIXING OF WOOD FRAMES

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

800 FIXING OF LOOSE THRESHOLDS

Spacing of fixings: Maximum 150 mm from each end and at 600 mm maximum centres.

809 FIRE RESISTING/ SMOKE CONTROL DOORS/ DOORSETS/ ROLLER SHUTTERS/ CURTAINS

Installation: By a firm currently registered under a third party accredited fire door installer scheme in accordance with instructions supplied with the product conformity certificate, test report or engineering assessment.

820 SEALANT JOINTS

Sealant:

Manufacturer: Ardex or similar.

Product reference: to suit application.

Colour: to match components.

Application: Triangular fillets finished to a flat or slightly convex profile.

For fire doors, use Envirograf Product 69 surface-mounted intumescent fire and smoke seal strips around all fire doors. See clause 273.

830 FIXING IRONMONGERY GENERALLY

Fasteners: Supplied by ironmongery manufacturer.

Finish/ Corrosion resistance: To match ironmongery.

Holes for components: No larger than required for satisfactory fit/ operation.

Adjacent surfaces: Undamaged.

Moving parts: Adjusted, lubricated and functioning correctly at completion.

840 FIXING IRONMONGERY TO FIRE RESISTING DOOR ASSEMBLIES

General: All items fixed in accordance with door leaf manufacturer's recommendations ensuring that integrity of the assembly, as established by testing, is not compromised.

Holes for through fixings and components: Accurately cut.

Clearances: Not more than 8 mm unless protected by intumescent paste or similar. Lock/latch cases for fire doors requiring > 60 minutes integrity performance: Coated with intumescent paint or paste before installation.

For hinge, lock and door closer fire protection use Envirograf Product 71 Intumescent Sheet to ensure the existing ironmongery is protected. Doors with less than 3 hinges should be upgraded using Envirograf Product 71 set of 3 self-closing hinges.

850 LOCATION OF HINGES

Primary hinges: Where not specified otherwise, positioned with centre lines 250 mm from top and bottom of door leaf.

Third hinge: Where specified, positioned _____ .

Hinges for fire resisting doors: Positioned in accordance with door leaf manufacturer's recommendations. Doors with less than 3 hinges should be upgraded using Envirograf Product 71 set of 3 self-closing hinges. Hinges must be firmly fixed with no missing or broken screws. Doors must be able to close properly.

860 INSTALLATION OF EMERGENCY EXIT DEVICES

Standard: Unless specified otherwise, install panic bolts/ latches in accordance with BS EN 1125

M20A PLASTERED COATINGS

GENERAL

General quality

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.

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.

Replacement laths

Shape: Riven / Sawn / Split – to match existing

Size: To match existing

Timber species: To match existing (e.g. oak, chestnut, larch)

Spacing: To match existing

Isolating membranes

Building paper: To BS 1521.

EXECUTION

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 m³ 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.

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.

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.

Plastering over existing laths: Thoroughly soak lath before base coat is applied

Thickness of coat: Not to exceed 15mm

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 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.

M60 PAINTING AND CLEAR FINISHING

GENERAL

General quality

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.

Pre-treatment: 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.

Pre-primed 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.

Pre-primed 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.

Pre-treatment: 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.

Over trowelled '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, re-putty 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.

Q20 GRANULAR SUB-BASES TO PAVINGS

GENERAL

General quality

Cross-reference

General: Read with A90 General technical requirements.

PRODUCTS

Granular material

Quality: Free from excessive dust, well graded, all pieces less than 75 mm in any direction, minimum 10% fines value of 50 kN when tested in a soaked condition to BS 812-111.

In any one 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.
- 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-burned non-plastic colliery shale.
- Natural gravel.
- Natural sand.

Highways Agency material

Standard: Highways Agency 'Specification for highway works'.

- Type 1 material: To HA specification clause 803.5.
- Type 2 material: To HA specification clause 804.6.

Non frost susceptible material

Definition (non frost susceptible material): To Highways Agency 'Specification for highway works' clause 705.5.

EXECUTION

Blinding

Finish: Vibrate to provide a close, smooth surface.

Cold weather working

Frozen materials: Do not use.

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

Protection

Sub-bases: As soon as practicable, cover with subsequent layers, specified elsewhere.

Q25 SLAB, BRICK, SETT, OR COBBLE PAVINGS

GENERAL

General quality

Cross-reference

General: Read with A90 General technical requirements.

Mortar: Read with Z21 Mortar.

Movement joint sealant: Read with Z22 Sealants.

Completion of design by contractor

Natural stone sett paving system: In accordance with BS 7533-7. Natural stone slab paving system: In accordance with BS 7533-4.

Design proposals

Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

PRODUCTS

Standards:

Natural stone slabs: To BS EN 1341.

Natural stone setts: To BS EN 1342.

- Freeze/ thaw resistance: Class 1 (F1).

Laying course sand for sand bedded concrete flags: To BS 7533-4, maintained at even moisture content that will give maximum compaction.

Sand for mortar to fully bedded slab/ flag paving: To BS EN 12620, grading 0/4 or 0/2 (MP) or 0/2 or 0/1 (FP). Bedding sand for precast concrete and grass paving: To BS EN 12620, grading 0/4 or 0/2 (MP).

Nonhydraulic lime for mortar bedding and pointing: To BS EN 459. Ready-mixed lime:sand for mortar bedding and pointing: To BS EN 998-2.

EXECUTION

Material samples

Samples representative of colour and appearance of any designated materials specified for the project: Submit before placing orders.

Designated materials:

- Natural stone slab paving; reference sample to BS EN 1341.
- Natural stone sett paving; reference sample to BS EN 1342.

Adverse weather

General:

- Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.
- Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
- Paving with mortar joints and/ or bedding: Protect from frost damage, rapid drying out and saturation until mortar has hardened. Paving laid and jointed in sand:
- Stockpiled bedding sand: Protect from saturation.
- Exposed areas of sand bedding and uncompacted areas of sand bedded paving: Protect from heavy rainfall.
- Saturated sand bedding: Remove and replace, or allow to dry before proceeding.
- Laying dry-sand jointed paving in damp conditions: Brush in as much jointing sand as possible. Minimize site traffic over paving. As soon as paving is dry, top up joints and complete compaction.

Laying paving – general

Appearance: Smooth and even with regular joints and accurate to line, level and profile.

Falls: To prevent ponding.

Bedding of paving units: Firm so that rocking or subsidence does not occur or develop.

Bedding/ Laying course: Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.

Slopes: Lay paving units upwards from the bottom of slopes. Paving units: Free of mortar and sand stains.

Cutting: Cut units cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.

Levels of paving

Permissible deviation from specified levels (generally): ± 6 mm. Height of finished paving above features:

At gullies: +6 to +10 mm.

At drainage channels and kerbs: +3 to +6 mm.

Regularity

Maximum variation in gap under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 10 mm.

Sudden irregularities: Not permitted.

Difference in level between adjacent blocks/ pavers/ setts (maximum): 2 mm.

Protection

Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining. Materials storage: Do not overload paving with stacks of materials.

Handling: Do not damage paving unit corners, arises, or previously laid paving.

Mortar bedded paving (ordinary site mixed mortar without additives): Keep free from traffic after laying:

Pedestrian traffic (minimum): 4 days.

Vehicular traffic (minimum): 10 days.

Access: Restrict access to paved areas to prevent damage from site traffic and plant.

Cementitious bases and sub-bases

General: Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.

Condition of sub-bases/ bases before spreading bedding (laying course)

Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.

Granular surfaces: Lay and compact so as to be sound, clean, smooth and close-textured enough to prevent migration of bedding/ laying course materials into the sub-base during compaction and use, free from movement under compaction plant and free from compaction ridges, cracks and loose material.

Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.

Sub-base/ roadbase level tolerances: To BS 7533-7, Annex A. Levels and falls: Accurate and within the specified tolerances. Drainage outlets: Within +0–10 mm of the required finished level.

Features in sand bedded paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.

Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.

Drainage holes in existing bases

Location: Impervious layers of existing road/ paving where new paving is to be overlayed on sand laying course. Drainage: Form regular grid of holes, through base and any additional build up, down to sub-base:

Spacing in both directions: 1000 mm.

Clear opening (minimum): 30 mm. Do not weaken or excessively disturb road/ paving.

Completion: Remove jagged or protruding edges. Fill voids with pea gravel. Ram down to form flush smooth surface. Laying geotextile sheet patches over drainage holes: Lay geotextile patches on the base, centred over each hole.

Site mixed fine concrete laying courses

Standard: In accordance with BS 7533-7.

Laying flag and slab paving – sand laying course and jointing

Standard: In accordance with BS 7533-4.

Flag installation and cutting: To Interpave 'Concrete flag paving'.

Laying natural stone sett paving

Standard generally: In accordance with BS 7533-7. Laying type: Rigid.

Laying concrete sett paving – mortar bedded

Laying: Spread and level a bed of mortar. Individually lay and hammer down the setts so that tops are level, leaving joints open. Jointing: Fill joints and finish neatly. Clean mortar from face of setts before it sets.

Sealant movement joints in mortar bedded units

Joint filler: Build in as work proceeds.

Barrier (joint breaker): Position filler and barrier accurately to fully support sealant at recommended distance from exposed faces of units.

Completion of paving with dry sand or fine aggregate filled joints

Sand dressing: Leave a thin layer of dry jointing sand over the paving, sweep clean before practical completion. Final compaction of the surface course: In accordance with BS 7533-3.

Vacuum cleaning machines: Not allowed.

R10 RAINWATER DRAINAGE SYSTEMS

To be read with Preliminaries/General conditions.

GENERAL INFORMATION

110 GRAVITY RAINWATER DRAINAGE SYSTEM

Rainwater outlets: Proprietary (see clause 365)

Gutters: PVC-U (clause 350)

Pipework: PVC-U (clause 420)

Below ground drainage: N/A

Disposal: N/A

Controls: N/A

Accessories: N/A

SYSTEM PERFORMANCE

210 DESIGN

Design: Complete the design of the rainwater drainage system taking into consideration roof layout, gutter fall and number and position of outlets required to maximize flow

Standard: Calculate rainfall intensity, and effective roof area to be drained in accordance with guidance in BS EN 12056-3, clauses 3-7 and National Annexes.

Proposals: Submit drawings, technical information, calculations and manufacturer literature.

350 GUTTER SYSTEM

Manufacturer and reference: Trade Contractor to submit to CA for review

Standards:

- British Standard Kitemark to BS EN 607:2004 / BS EN 12200-1:2000 / BS EN 1462:2004
- Manufacturer to hold ISO 9001 Quality Management System accreditation, ISO 14001 and ISO 18001 accreditation.

Type: Half round, ~~Square~~, ~~Ogee~~, ~~Deep~~

Colour: Black

Fixing specification: Use all fixing positions on all brackets, unions, angles and outlets. Fix with minimum 2 x 25mm No. 10 s/s round heads. Maximum 600mm metre centres.

Accessories: Angles, stop ends, fascia bracket, running outlet, union bracket in accordance with system selection

Important Information: The potentially adverse effects on a poorly secured gutter system of high intensity rainfall and periods of standing snow, with prolonged freeze/thaw loading, highlight the importance of following the recommended fixing centres and gutter positioning advice

In addition all fixing holes should be used on all brackets and the use of snowboards is recommended where appropriate.

420 PVC-U PIPEWORK – EXTERNAL

Manufacturer and reference: Trade Contractor to submit to CA for review

Standards:

- British Standard Kitemark to BS EN 607:2004 / BS EN 12200-1:2000 / BS EN 1462:2004
- Manufacturer to hold ISO 9001 Quality Management System accreditation.

Type: As derived by design

Colour: Black

Fixing specification: Use all fixing positions on brackets. Fix with suitable depth No. 10 s/s round head screws into wall plugs suitable for substrate. Maximum vertical distance between pipe brackets 1.8 m.

Accessories: Angles, brackets, clips, shoes as required

615 SETTING OUT EAVES GUTTERS – TO FALLS

Setting out: To true line and even gradient to prevent ponding or backfall. Position high points of gutters as close as practical to the roof and low points not more than 50mm below the roof.

Outlets: Align with connections to below ground drainage.

616 SETTING OUT EAVES GUTTERS – LEVEL

Setting out: Level and as close as practical to the roof.

Outlets: Aligned with connections to below ground drainage

635 FIXING PIPEWORK

Pipework: Fix securely, plumb and/or true to line.

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

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

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

Provide a load bearing support at least every storey level.

Tighten fixings as work proceeds so that every storey is self-supporting.-Wedge joints in unsealed metal pipes to prevent rattling-Wall and floor penetrations: Isolate pipework from structure.

640 FIXING VERTICAL PIPEWORK

Bracket fixings: 2 x 25mm No. 10 s/s round heads-Distance between bracket fixing centres: 1.8 m (maximum)

650 JOINTING PIPEWORK AND GUTTERS

General: Joint with materials and fittings that will make effective and durable connections. Where required, long swan necks or outlet fittings, it may be acceptable to add a small grubber screw in a limited visibility position to minimise slippage risk.

Jointing differing pipe work and gutter systems: Use adaptors intended for the purpose however where such a product does not exist drill, screw and seal with suitable sealant being careful to maintain flow to outlet position.

Cut ends of pipes and gutters: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting them 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: Strike off flush. Do not allow excess material to project into bore of pipes and fittings as this could lead to blockages.

Surplus flux, solvent jointing materials and cement: Remove as appropriate.

SAFE USE OF PVC RAINWATER SYSTEMS:

Also see Sections 2-4 of this specification.

The European Chemicals Agency (ECHA) has published its Guidance for the implementation of the REACH directive (Registration, Evaluation, Authorisation and Restriction of Chemicals) and as a supplier of “articles” that do not contain Substances of Very High Concern (commonly known as the SVHC list)

Storage & Handling Measures

Follow normal good safety practice when handling long, heavy goods. Loading and unloading should be carried out by hand. It is recommended that both ends of long profiles should be supported when handling.

PVC rainwater profiles should be stacked in its protective sleeving on a flat, firm base with a stacking height not exceeding 1 metre.

Storage in the open is not recommended unless additional protection is provided.-PVC should be stored in dry conditions and kept far away from direct or indirect heat sources.

Safety Measures

PVC should be cut with the correct tools, never broken.

Although not harmful, dust particles caused by cutting the product may cause physical irritation if they get into the eyes therefore eye protection should be worn when using power tools

Avoid inhaling dust if the product is cut and the use of protective dust masks is advisable - filter type P2 is recommended. Dust should not be allowed to accumulate, and a high standard of housekeeping should be maintained

Ingestion is not recommended.

Disposal & Release Measures

Recover any dusts formed by vacuum or mechanical collection. Shovel into a suitable container for disposal. Sweep up to prevent a slipping hazard

Recycle any off-cuts if possible

Destroy the product by incineration (in accordance with local and national regulations)

Z10 PURPOSE MADE JOINERY

GENERAL

General quality

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.

Further processed sections: To BS EN 1313-1, clause NA2. Hardwood:

Sawn sections: To BS 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.

Z12 PRESERVATIVE AND FIRE RETARDANT TREATMENT

GENERAL

General quality

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.

BWPDA Commodity Specifications

Standard: Current edition of the British Wood Preserving and Damp-proofing Association (BWPDA) Manual. Solution strengths and treatment cycles: Select to achieve specified service life and to suit timber treatability.

Copper-organic preservative treatment

Type: Including copper azole (CuAz) and alkaline copper quaternary (ACQ). Application: High pressure impregnation.

Moisture content of wood at time of treatment (maximum): 28%. After treatment, allow timber to dry before using.

Copper chromium arsenic (CCA) preservative treatment

Usage: Restrictions imposed by European Commission Directives apply.

Prohibited uses include: Residential and domestic structures (whatever the purpose) and applications where there is a risk of repeated skin contact.

Application: High pressure impregnation.

Moisture content of wood at time of treatment (maximum): 28%.

Condition of treated timber before use: Dry. Do not use for minimum 14 days after treatment.

Copper chromium based preservative treatment (other than CCA)

Type: Including chromated copper (CC), copper chromium phosphate (CCP) or copper chromium borate (CCB). Application: High pressure impregnation.

Moisture content of wood at time of treatment (maximum): 28%.

Condition of treated timber before use: Dry. Do not use for minimum 14 days after treatment.

Organic solvent preservative treatment

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

Application: High pressure impregnation.

Moisture content of wood at time of treatment (maximum): 28%. Condition of treated timber before use: Dry.

Creosote preservative treatment

Usage: Restrictions imposed by European Commission Directives apply.

Prohibited uses include: Inside buildings and in parks, gardens or outdoor leisure facilities where there is a risk of frequent skin contact.

Application: Immersion or 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.

Fire door treatment (all fire doors)

Type: Envirograf Product 42 HW02E intumescent paint

Finish: Clear coating.

Application: Apply as per manufacturer's instructions on risk side of door.

Moisture content of wood at time of treatment: As specified for the timber/ component at time of application

Fire door with penetrations treatment

Type: Use Envirograf Product 38, Intumescent Card/Veneer, in conjunction with Product 42 Intumescent Paint to repair penetrations in fire doors

Finish: Select wood veneer providing closest match to existing door or alternatively paint or varnish fitted product as per manufacturer's guidance.

Application: Apply as per manufacturer's guidance.

Fire door ironmongery treatment (all fire doors)

Type: Use Envirograf Product 71 Intumescent Sheet for hinge, lock and door closer fire protection.

Application: Apply as per manufacturer's instructions. Hinges must be firmly fixed with no missing or broken screws. Door must be able to close properly.

Z20 FIXINGS AND ADHESIVES

GENERAL

General quality

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.

Fire door ironmongery (all fire doors)

Types of hinges: Any doors with less than 3 hinges should be upgraded using the Envirograf Product 71 Set of 3 Self-Closing Hinges.

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

To be read with Preliminaries/ General conditions.

CEMENT GAUGED MORTARS

110 CEMENT GAUGED MORTAR MIXES

Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

120 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.

131 READY-MIXED LIME:SAND FOR CEMENT GAUGED MASONRY MORTARS

Standard: To BS EN 998-2.

Lime: Nonhydraulic to BS EN 459-1.

Type: CL 90S.-Pigments for coloured mortars: To BS EN 12878.

135 SITE MADE LIME:SAND FOR CEMENT GAUGED MASONRY MORTARS

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.

160 CEMENTS FOR MORTARS

Cement: To BS EN 197-1 and CE marked.

Types:

- Portland cement, CEM I.
- Portland limestone cement, CEM II/A-L or CEM II/A-LL.
- Portland slag cement, CEM II/B-S.

- Portland fly ash cement, CEM II/B-V.

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.

180 ADMIXTURES FOR SITE MADE CEMENT GAUGED MORTARS

Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.

Other admixtures: Submit proposals.

Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

190 RETARDED READY TO USE CEMENT GAUGED MORTAR

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.

Re-tempering: Restore workability with water only within prescribed time limits.

200 STORAGE OF CEMENT GAUGED MORTAR MATERIALS

Sands and aggregates: Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.

Factory made ready-mixed lime:sand/ ready to use retarded mortars: Keep in covered containers to prevent drying out or wetting.

Bagged cement/ hydrated lime: Store off the ground in dry conditions.

210 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.

LIME:SAND MORTARS

310 LIME:SAND MORTAR MIXES

Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

320 SAND FOR LIME:SAND MASONRY MORTARS

Type: Sharp, well graded.-Quality, sampling and testing: To BS EN 13139.

Grading/ Source: As specified elsewhere in relevant mortar mix items.

330 READY PREPARED LIME PUTTY

Type: Slaked directly from CL 90 quicklime to BS 890, 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): _____

335 READY PREPARED LIME PUTTY

Manufacturer: Submit proposals to CA and Structural Engineer for review

Product reference: _____

Maturation period before use (minimum): _____

340 POZZOLANIC ADDITIVES FOR NONHYDRAULIC LIME:SAND MORTARS

Manufacturer/ Supplier: _____

Product reference: _____

Mixing: Mix thoroughly into mortar during knocking up.

345 ADMIXTURES FOR HYDRAULIC LIME:SAND 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.

350 STORAGE OF LIME:SAND MORTAR MATERIALS

Sands and aggregates: Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.-Ready prepared nonhydraulic lime putty: Prevent drying out and protect from frost.

Nonhydraulic lime:sand mortar: Store on clean bases or in clean containers that allow free drainage. Prevent drying out or wetting and protect from frost.

Bagged hydrated hydraulic lime: Store off the ground in dry conditions.

360 MAKING LIME:SAND MORTARS GENERALLY

Batching: By volume. Use clean and accurate gauge boxes or buckets.

Mixing: Mix materials thoroughly to uniform consistency, free from lumps.

Contamination: Prevent intermixing with other materials, including cement.

370 SITE PREPARED NONHYDRAULIC LIME:SAND MORTARS

Mixing: Mix materials thoroughly by compressing, beating and chopping. Do not add water.

Equipment: Roller pan mixer or submit proposals.

Maturation period before use (maximum): _____

380 READY TO USE NONHYDRAULIC LIME:SAND MORTARS

Manufacturer: _____

Product reference: _____

Materials: 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): _____

390 KNOCKING UP NONHYDRAULIC LIME:SAND MORTARS

Knocking up before and during use: Achieve and maintain a workable consistency by compressing, beating and chopping. Do not add water.

Equipment: Roller pan mixer or submit proposals.

400 MAKING HYDRAULIC LIME:SAND MORTARS

Mixing 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.

Z22 – SEALANTS

To be read with Preliminaries/ General conditions.

PRODUCTS

310 JOINTS

Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

Sealant for all fire doors

Type: Envirograf Product 69 surface-mounted intumescent fire and smoke seal strips

Use: Strips to be used around all fire doors, along the left, top and right edge of door frames.

Dimensions: Ensure a minimum 3mm-3.5mm gap exists between door and frame, down the closing stile and across the head. Only a 1mm gap is required down the back edge as the standard strip is only 1mm thick and covers hinges without binding.

EXECUTION

610 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: _____

620 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.

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.

630 APPLYING SEALANTS

Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.

Environmental conditions: Do not dry or raise temperature of joints by heating.

Sealant application: 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.

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