

Architect's Specification

Project Particulars:

Project: Extension of the Potting Shed and change of use to artists' studios, and associated external works and internal alterations to the dance studio.

Job No: 25-024

Client: Tyrone Guthrie Centre

Address: Annaghmakerrig House Newbliss Co. Monaghan H18 PP70

Rev	Date	Prepared by	Checked By
Rev.01	23/07/2026	AF	DC

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1. Tender & Contracts

01. Tenders

01.1. General Conditions

Tenders will be opened with Architect in attendance and an award of Contract will be made as soon as possible thereafter. The contractor's tender must be submitted with all spaces filled in. No tender shall be withdrawn without the consent of the Architect for a period of sixty (60) days after the date which tenders are due. The Contractor's tender will be required to remain open for ninety (90) days and must be a fixed price tender bid. The intended date of commencement of construction is indicated in the Tender Documents. The successful Tenderer shall be requested to enter a contract with the Client.

01.2. Rejection of Tenders

The Client reserves the right to reject any or all tenders and to accept that tender which in its judgement presents best value for money. All costs and /or obligations incurred by the Tenderer in the preparation and submission of his tender are to be borne by the Tenderer. In no instance will the Client reimburse the Tenderer for any such costs and/or obligations.

01.3. Price

In the event of discrepancies between the price quoted in the tender in words and those quoted in figures, the words shall control. The price is to include all facilities and the performance of all labour and services necessary for the proper completion of the work, except as may be otherwise specified in the contract documents.

01.4. Tender Sum

Contractors shall submit their tenders for a gross specific sum which shall include all implements, plants, carriage, cartage, and all expenses incidental to the due performance of the several works set forth in this specification and shown on the drawings, to their true intent and meaning, and in accordance with any further instructions which may be given from time to time by the Architect, and the rendering up of same in a complete state by the date agreed upon.

01.5. Insurance

The Tenderers shall be responsible for insurances as follows:

Insure against Employers and Public Liability in accordance with the Conditions of Contract, the limit of Public Liability Insurance to be €12.6 m.

Similarly maintain All Risk Insurance for the works and ancillary items in accordance with the Conditions of Contract.

Proof to the Employer that insurances are in effect must be provided before commencing the works.

They shall price all insurance for the works as per the standard Form of Contract, (copy enclosed with tender documents) and with variations as indicated (if any).

In all cases the Contractor's tools, plant and equipment shall be insured by the Contractor.

The Contractor shall include for procuring that the insurance cover required to be obtained and maintained by the Contractor and shall provide indemnity in respect of any claim for bodily injury or property damage which the contractor may incur by reason of the performance of the functions and duties of the Project Supervisor for the Construction Stage (PSCS) of the project.

01.6. Omissions, Discrepancies, Interpretations, and Addenda

Should a Tenderer find discrepancies in or omissions from the drawings or other Tender documents or be in doubt as to their meaning, a request for interpretation shall be made, in writing, addressed and forwarded to the Architect.

The Tenderer should note that all materials and products specified in this document and in the enclosed drawings are called up to establish a standard. Alternatives to a similar approved quality / finish will be considered for approval by the Architect. All such alternatives shall be listed and priced separately in a document to be enclosed with the returned tender form.

01.7. Measurement and payment

Payment terms will be as specified in the conditions of Contract.

The work will not be re-measured. The quantity will only be varied as to additions or deletions. Such additions or deletions will be valued based on the detailed Schedule of Rates which each Tenderer provides, and rates shall be developed by the Tenderer during their take-off, shall contain a complete listing with rates of all items relevant to the Contract and shall be sued in the case of all variations.



Tenders shall be considered invalid if this detailed Schedule of Rates is not submitted by the Tenderer with their Tender.

01.8. Extras Inadmissible

The Contractor shall be held to have satisfied themselves by a careful examination of the plans and specifications and by inspecting the site as to the amount of work to be done to enable the works to function satisfactorily. This shall include all items reasonably and obviously inferred as necessary, though not described in the specification nor shown on the drawings. The contract is for finished work, fully adapted to the purpose and meaning of the drawings and specification and no extra payment beyond the contract price will be allowed in consequence of the Contractor having to properly acquaint himself with the site, drawings or specification.

01.9. Pre-award meeting

A pre-award meeting will be held with the proposed Contractor. The minutes of this meeting shall be understood to be binding on all parties.

02. Contract

02.1. Form of Contract

The form of contract will be PW CF6

02.2. Contract Documents

The Contract documents will be as follows:

- Letter of Invitation
- Directions for Tendering
- Architect's Drawings
- Architect's Specification
- Site Access and Limitations
- Preliminary Inspection Plan
- Preliminary H&S Plan
- H&S Documents Required
- Designer Risk Assessment
- Pricing Document
- Form of Tender & Schedule
- Pricing Document

02.3. Scope of Contract

The contractor shall carry out and complete the works in accordance with the drawings, this specification, other contract documents and the instructions to the reasonable satisfaction of the architect and consulting engineers.

All relevant Building Regulations, British, Irish, and European standards to be strictly adhered to. Detailing and construction to be generally in accordance with the current edition of the Home Bond House Building Manual and recognised standard details in relation to cold bridge prevention.

The successful Tenderer will operate as a Main Contractor direct to the Client and his tender must therefore allow for all attendance's, plant, scaffolding, welfare facilities, office accommodation, plant, storage, loading and unloading, crange, protection, light, electrical distribution, and power, cleaning away rubbish and all other general items necessary to fully execute the contract, save those specifically referred to later on in the specification.

02.4. Programme of work for the project

On acceptance of a tender the successful contractor shall furnish their full programme of work for the project.

- **Date for Possession:** Tenderer to advise on return of best possible tender start date. Works are due to commence **December 2025**.
- **Date for Completion:** Tenderer to advise on return of tender best possible completion date but no later than **July 2026**

Requests for an extension of time should be made to the Architect within 14 days of a valid reason for extension occurring and if this be justified the completion date will be revised accordingly.

- **Defects Liability Period:** 12 months



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02.5. Conditions of Contract**02.5.1. Payment**

The Contract shall be on a fixed price basis, with no increase in costs in either labour or materials allowed.

The Defects Liability Period will be for a period of 6 **months** after the date of Practical Completion and retention of 5% of the gross amount certified will be held during the period of the contract; half this retention fund will be released at the Practical Completion stage with the remainder being held over the Defects Liability Period.

02.5.2. Variations

Variations shall not vitiate the Contract and all authorized alterations, additions, or deletions (which shall be issued by the Architect only in writing) shall be measured at the rates in the detailed Schedule of Rates. Variations shall be valued, presented, and agreed within 30 days of the issue of the variation order by the Architect, in writing before the work commences on a standard Variation Order Form. Notwithstanding anything else expressed or implied in the Conditions of Contract. Variations or claims for additions presented by the Contractor later than 30 days after the work is carried out or the event in question takes place shall not be considered valid and the Contractor shall have no recourse under the Terms of Contract.

02.6. Liquidated Damages

The entire construction shall be complete and handed over to the Client on the intended completion date as noted in the Form of Tender and Schedule. Liquidated Damages, in accordance with the Building Contract, to the value indicated in the Form of Tender, shall be applied for each week or part thereof lost after the completion date.

There shall be no maximum on the number of damages claimed in this manner.

Liquidated & Ascertained Damages will apply and will be calculated on the weekly basis.

Damages: rental cost of an alternative accommodation and all other relevant costs incurred due to late possession.

02.7. Guarantee

The Contractor shall guarantee the performance of the entire installation and all items forming part of the installation. The defects liability period to be 12 calendar months from the date of Practical Completion of the finished works. The Contractor shall make good any defect during this period.

02.8. Bonding

If required in the Form of Tender, the contractor shall obtain a Performance Bond to the value of 25% if the contract value from a recognized bonding house and shall submit same for approval by the Client before contract is signed. The Bond shall remain in force to the end of the Defects Liability Period.



2. Preliminaries

2.1 Information Issued

02.1.1 Drawings

Drawings, which form part of this tender, are to be used for tender purposes only. While deviations are not expected from these drawings, no materials shall be ordered until a full 'CONSTRUCTION ISSUE' of drawings is approved.

The Architect may issue additional drawings during the progress of the works to amplify the specification. Minor divergences from the tender drawings will not constitute a reason for variations in the rates which the Tenderer used to make up their tender.

02.1.2 Figured Dimensions

Figure dimensions shall be taken in preference to measurements by scale and detail drawings in preference to those of a smaller scale.

02.1.3 Own Confirmation

The drawings and specification are believed to be completed and checked accurate but the contractor shall be deemed to have checked these and to have satisfied themselves as to their accuracy and as to the nature of the site, the subsoil, dimensions, levels, existing premises and water supply and all the other things as regards any connection they may have with the works, the subject of this contract, and he shall generally obtain his own information on all matters and things which can in any way, influenced his tender. Any tenderer viewing the site should carry the necessary insurance to do so.

02.1.4 Requirements of the Specification/Materials

Unless otherwise specified, all materials and workmanship shall be in accordance with the Construction Products Regulations and European Harmonised Standards. All relevant products shall be CE marked. These shall comply with Irish Standards (or approved international equivalent) and Codes of Practice and in every such case the latest issue or amended issue shall be complied with.

All materials to be incorporated into these works shall comply with the European Community (Construction Products) Regulations 1992.

02.1.5 Quality of Materials & Workmanship

All materials shall be the best of their respective kinds, and the best work of the specified shall be insisted upon throughout; all the horizontal lines and plane surfaces shall be worked quite true and the whole executed in a substantial and workmanlike manner.

02.1.6 Measurement and payment

Payment terms will be as specified in the conditions of Contract.

The works will not be re-measured. The quantity will only be varied as to additions or deletions. Such additions or deletions will be valued based on the detailed Schedule of Rates which each Tenderer provides, and rates shall be developed by the Tenderer during their take-off, shall contain a complete listing with rates of all items relevant to the Contract and shall be sued in the case of all variations.

Tenders shall be considered invalid if this detailed Schedule of Rates is not submitted by the Tenderer with their Tender.

2.2 General obligations

02.2.1 Statutory Requirements

The Contractor shall conform to all Local Authority requirements regarding regulations, inspections, etc. The contractor should also allow for Local Authority notifications.

The work shall be carried out in accordance with the provisions of the Building Regulations. If the contractor or any of their agents becomes aware of any aspect of the works included does not comply with the Building Regulations, it must be notified immediately to the Design Team.

02.2.2 Supervisor

The Contractor shall assign full time to the project a competent supervisor who shall have sole responsibility for all operations on site (PSCS).



02.2.3 Main Contractor

The successful Tenderer will operate as a Main Contractor direct to the Client and their tender must therefore allow for all attendance's, plant, scaffolding, welfare facilities, office accommodation, plant, storage, loading and unloading, crange, protection, light, electrical distribution, and power, cleaning away rubbish and all other general items necessary to fully execute the contract, save those specifically referred to later on in the specification.

02.2.4 Nominated Sub-Contractors

The following packages of works will be carried out by Nominated Sub-contractors:

Other elements of the project may form nominated sub-contracts.

02.2.5 Industrial Relations

The Contractor shall be responsible for ensuring a good industrial relations climate on the site. He shall not hire any labour directly at the site. Persons applying for a job on site must be referred to the nearest FAS service office through which all new labour needed for the job shall be cleared, insofar as this is practicable.

In the event of a dispute arising, the Contractor shall take all precautions to avoid a strike situation and in the event of a strike taking place shall ensure so far as is possible that the site is not picketed.

The Contractor in addition shall provide to the Architect, a minimum of 3 days before construction starts, a full list of all personnel to be employed on site. The Architect shall receive clearance from the Client and shall communicate back to the Contractor before the workforce appears on the site.

If at any time during construction the Contractor wishes to change any of the site personnel or operatives, the replacement personnel must be cleared in a similar fashion. The successful Tenderer shall present to the Architect at the Pre-Commencement Meeting a full resume of the employment conditions of all members of his workforce. No appointment shall be made until these conditions of appointment are reviewed by the Architect and the Client.

02.2.6 Domestic Sub-Contractors

The Tenderer shall supply upon request a list of all domestic Sub-Contractors which they intend to use on the project. No Sub-Contractor shall be employed unless the Sub-Contractor shall be approved by the Architect who will require the sub-contractor be of the highest quality and to be highly experienced in relation to the work in question.

02.2.7 Employer's Access to Site

The Client and the Architect shall have at all reasonable times, access to the site for inspection of works.

2.3 Obligations relating to Works.

02.3.1 Examination of the Site

Tenderers are required to examine and thoroughly familiarise themselves with the scope of the work from the standpoint of access and facilities for receiving and storage of materials and equipment.

The Contractor is recommended to visit the site and ascertain the facilities thereto, the supply of labour and materials the district will afford and a general convenience of working.

They shall be taken to have acquainted themselves with the nature of the works and the character, dimensions, levels and any other features of the site, all existing buildings on or adjacent to the site and all other things that have any connection with or will affect the works.

All the above matters must be considered when tendering and any charge for extra labour or materials will not be allowed in consequence of the Contractor's failure to do so.

02.3.2 Existing Services

The location and arrangement of existing services, as appropriate, is indicated on the drawings. These drawings show to the best of our knowledge the extent of services. Contractor needs to carry out their own investigations to establish existing services and to satisfy themselves of their locations, as there is no guarantee to the accuracy of the drawings.

02.3.3 Setting out

The Contractor shall be responsible for setting out all the works shown on the drawings and referred to in the documents and shall keep on site all instruments and tools required by the Architect in checking and setting out. This is understood to allow for fully setting / marking out the works to the extent and in

the manner deemed necessary by the Architect. The Contractor shall set out location and peg out the building footprint for approval prior to digging of foundations. The Contractor shall notify the Architect in writing when all lines or levels are set out and ready for checking.

02.3.4 Protection of the Works

Contractor is to provide for complete and ample protection of the works during the contract; adjoining premises shall be carefully protected against all accidental damage from any other source arising directly or indirectly from the carrying out of the works. Provide all necessary screens, tarpaulins, etc. and any other protection deemed necessary by the Architect.

02.3.5 Filling in Holes

The Contractor shall from time to time as the work proceeds and again at the completion of same, clear away all rubbish that may have become superfluous, and the Contractor shall bear and pay all costs, charges, damage and expenses which may be incurred or sustained on account of or in consequence of any accident which may happen by means of holes and trenches being left unfenced or unprotected. The Contractor shall provide substantiation of prompt payment with any claim for a prompt payment allowance. Provided prompt payment of any amount due to a nominated supplier or a nominated sub-contractor is made by the Contractor; the Client will allow an addition of 2.5% of the net amount paid by the Contractor to the nominated supplier or nominated Sub-Contractor on foot of an Architects certificate to be included in subsequent interim valuations for work in progress and in the calculation of the final contract sum.

02.3.6 Cleaning of the Completed works

The Contractor will clean the completed premises after the completion of the works and before hand over to the satisfaction of the Architect.

This work is understood to include cleaning the premises both internally and externally, removing all debris, waste, and the like off site.

The premises will be cleaned internally and externally and left free from dust and soiling, with window glass clean both faces and the entire perfect upon completion. This condition will be strictly enforced.

02.3.7 Responsibility

The works from the commencement of the Contract until the completion of same shall be under the Contractor's charge and he shall be held responsible for and shall make good, to the satisfaction of the Architect, all injuries, damages, and repairs occasioned to or rendered necessary to the works and to adjoining premises by fire or by causes over which the Contractor shall have control, and he shall hold the Client indemnified from any neglect, misconduct or want of proper care on the part of persons in his employment during the course of the Contract. The Contractor shall provide for all necessary insurance to cover these risks. The Contractor shall be responsible for all necessary security in respect of the site.

02.3.8 Damage to existing services

Notwithstanding the information provided on the drawings the contractor shall ascertain the position of all services and shall ensure that all such services are adequately protected during construction. He shall be responsible for all damage consequential or otherwise arising out of losses by any party due to damage of essential services. He shall also be responsible for all damage out by him to all roads / pavements / landscaping on site and for repairing such damage.

02.3.9 Adjoining Buildings

The works area adjoins other residential properties. It will be the contractor's responsibility that no damage whatsoever is caused to the adjoining properties and/or associated buildings.

02.3.10 Health and safety

At all times the site is to be kept in a safe manner.

02.3.10.1 Health & Safety & Welfare at Work

These works will be subject to the Health, Safety and Welfare at Work (Construction) Regulations 2006 (SI 504) and subsequent amendments. The Tenderer should assume that he will act as the Project/Construction Supervisor (PSCS) and accordingly will produce the Health and Safety Plan for the project in addition to the Safety File. All costs related to same are understood to be included Contractor's Tender submitted for these works. The personnel to be assigned for these duties are



required to be competent and experienced in the judgement of the Client, whose decision will be final in such matters.

The Contractor shall be appointed by the client under a Collateral Agreement to the Main Contract as Project Supervisor for the Construction Stage in respect of the project pursuant to the Safety, Health, and Welfare at Work (Construction) Regulations 2006. The Contractor shall include all costs for the provision of the services of Project Supervisor for the Construction Stage.

02.3.10.2 Hot Work Permit

The Contractor will be required to instruct his employees and sub-contractor's staff in the operation of the requirements of "Hot Work Procedures" within the provision of agreed insurance procedures for the works; this will be an in-house Contractor operation. This should allow for cooling down periods in the evenings.

2.4 Restrictions imposed by the Employer.

02.4.1 Works Area

The extent of the works area is defined on the site plan provided. The contractor is required to contain the works operation to the defined works area and to maintain all surrounding areas (outside of the works area) free for safe passage of other road users.

02.4.2 Access to Site

Access to the site will be by prior agreement with the client, must be kept secure and restricted to construction personnel only. All works associated with the construction to be contained within the confines of the site. Extend of construction personnel parking and area for site deliveries must be agreed with the Client prior to commencement of works.

02.4.3 Contractor's Works Compound

Car parking will be allowed for Contractor staff outside the confines of this site.

The Contractor will provide canteen, site office and other site facilities.

The Contractor to provide an area within the site for his on-site services co-ordination meetings.

A phone and e-mail are required in the site office.

Toilet facilities to be made available by the Contractor, and to be kept in a good, sanitized condition.

02.4.4 Noise

There are also existing, residential buildings in the proximity of this building, noise restrictions should not unduly restrict working hours, but the contractor should be aware of the area and its occupants. Disruptive noise should be programmed to periods of the day causing least nuisance, namely from 8:00 am till 6:00 pm.

02.4.5 Working Hours

Notwithstanding the above, there will be no unreasonable restriction on the working hours of the contractor subject to agreed notices and procedures being followed regarding out of hours working, with approval from the Client.

02.4.6 Substitutions

The Contractor may not make substitutions of any description or type unless the Architect approves same. Equal approved materials may be used subject to written request from the main contractor and confirmation that they are at least equal to or better than that mentioned in the specification. Substitution can only be allowed when authorised in writing by the architect.

2.5 Information Required

02.5.1 Safety File

The Contractor shall include for providing all necessary information as requested by the Project Supervisor for the Construction Stage to enable the preparation and completion of the Safety File excluding drawings and specifications which shall be provided by the appropriate members of the design team and relevant nominated duties of the Project Supervisor for the Construction Stage of the Project.



The Contractor shall include for providing assistance to the appropriate members of the design team (and to relevant nominated sub-contractors) in preparing "Construction" drawings for inclusion in the Safety File. The safety file shall be handed over to the employer within 2 working weeks of completion, or a time agreeable to the employer. Additional Clauses may be required for individual projects to take account of particular risks.

02.5.2 Method Statement

The contractor is required to submit with their tender a method statement outlining the site management and construction procedure, which the contractor intends to employ for the purposes of these works, if successful in his tender for same.

02.5.3 Record Photographs

Digital photographs required in JPEG format. Image size suitable for reproduction in documentation (not presentation i.e., c 500kB) to be provided digitally and to record site activity regularly, i.e. daily. Full set to be provided to the architect at the completion of the project.

02.5.4 Samples

If requested by the Architect, samples of all materials proposed to be used for the works shall be submitted to him, together with the name and address of the supplier and such information, instructions and directions as the supplier has issued. Samples shall then be subject to the Architects approval prior to the delivery of materials to the site. **All materials delivered to and used upon the works must be at least equal in quality to the samples**, and the Contractor shall ensure that he complied with all manufacturer's instructions and recommendations. Any materials condemned by the Architect as unfit for use in the works shall be immediately removed from the site at the Contractor's expense. The sample size generally shall be 1 m x 1 m panels.

02.5.5 Manufacturers Certificates / Ancillary Certificates

Where proprietary products or systems are specified to comply with manufacturer's recommendations and/or specifications, the Contractor is required to arrange for a representative of the manufacturing organisation to visit the site, to inspect the works in progress and/or at completion and to certify, in a form to be agreed, that the installation has been installed in accordance with the requirements of the said manufacturer, as current at the time of completion.

3. Site Works

3.1 General

The nature and extent of all the various site works is indicated on the Architect's drawings. The Contractor will clear the site, excavate for the building & complete all the relevant site works.

3.2 Demolition

Demolish structures in accordance with BS 6187.

All personnel to be appropriately skilled and experienced for the type of work and experienced in the assessment of risks involved and methods of demolition to be used.

All rubble and debris unsuitable for fill to be removed from site. All waste generated during construction shall only be disposed at a site which has a current waste licence or waste permit in accordance with the Waste Management Acts 1996 to 2008.

3.3 Dust control

Reduce airborne dust by periodically spraying demolition works with wetting agent. Maintain all public roadways and footpaths clear of mud and debris. All site operatives and public are to be fully protected from hazards associated with vibration, dangerous fumes and dust arising during the work.

3.4 Excavation

03.4.1 Removal of trees/shrubs

Clearly identify trees to be removed for approval by the Architect on site.

Cut down small trees, shrubs, and hedges, grub up and dispose of roots without unnecessary disturbance of soil and adjacent areas. Comply with HSE/ Arboriculture and Forestry Advisory Group Safety Guides.

03.4.2 Removal of large trees

Where the tree to be removed has a girth exceeding 600 mm, the following must be carried out.

Clearly identify trees to be removed for approval by the Architect on site.

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

Obtain approval before removing stumps and remove mechanically to a minimum depth of 250mm below ground level.

03.4.3 Reducing Levels

Prior to excavation or filling, strip topsoil from areas indicated on the drawings. Reduce to an average depth of 300 mm.

3.5 Radon and other ground borne gasses.

Supply and fit venting layer and membrane equal to Monarflex RMB 400 loose laid polyethylene gas retardant & damp proof membrane in strict accordance with the manufacturer's instructions. Also, radon sump size 900 x 900 x 215mm connected to pipe work venting through wall vent outlets and capped. Venting system must conform to BR 211, BR 212, and Building Regulations. Gas measurements at any location throughout the works area up to 5 m above ground level should not exceed 200 Bq/m³. Allow 1 radon sump per 200sqm floor area.

3.6 Damp Proof Course

DPC shall be to BS 6515 and installed in accordance with the manufacturer's instructions. DPC shall be placed in continuous lengths on full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles at least the full width of leaf unless otherwise specified. Edges of DPC must be not covered with mortar or project into cavity. Provide continuous Joint with damp proof membrane and or Radon barrier continuous and effectively sealed. Form tray around cills in one piece and turned up at back of cill and around edges. Provide vertical DPC at all reveals.

3.7 Drainage

Refer to the specification and drawings prepared by the Engineers for all details regarding this element of work.

4. Concrete

4.1 General

04.1.1 Cement

The cement shall be ordinary Portland cement to comply with IS 1:1963 (amended 1971). It shall be stored in a dry weather-proof shed with a raised wooden floor or in a silo and shall be delivered in quantities sufficient to ensure that there is no suspension or interruption of the work of concreting at any time.

04.1.2 Sand

Sand shall be clean river or pit sand well graded to pass through a mesh 4.75 mm square.

04.1.3 Aggregates

All in aggregates shall consist of naturally occurring material complying with US. 5: 1974 well graded from the nominal maximum size shall be kept free from contact with deleterious material.

04.1.4 Coarse Aggregate

Coarse aggregate shall consist of natural gravel, crushed gravel or stone complying with IS. 5: 1974 well graded from the nominal maximum sizes specified. All aggregates brought upon the site shall be kept free from contact with deleterious material.

04.1.5 Admixtures

No admixtures or additives shall be used in the concrete unless permission is first sought in writing from the Architect.

04.1.6 Water

Use only water which is clean and free from harmful matter, drawn from the main or stored tanks. Use only sufficient water to achieve a good workable mixture.

4.2 Concrete Quality

04.2.1 Mixes

Use only the following concrete mixes:

		Maximum Aggregate Size	Concrete Grade	Minimum Cement Content	Maximum Water To Cement Ratio
a.	Reinforced Concrete	20mm	35	300kg/ 0.6 m3	
b.	Structural Screeds	10mm	35	300kg/ 0.6 m3	
c.	Blinding Concrete	20mm	20	220kg/ 0.8 m3	
d.	Lean Concrete Filling	20mm	10	150kg/ 0.8 m3	

04.2.2 Placing

Concrete shall be transported from the site mixer or mixer truck as rapidly as possible by methods which shall prevent segregation loss of any of the ingredients.

Vibrate all reinforced concrete with vibrators working at a frequency of not less than 5000 cycles per minute, taking care to avoid contact with shuttering and reinforcement. Vibrate continuously to expel all air but without promoting segregation.

Care shall be taken to avoid displacement to reinforcement and damage to formwork.

A competent steel-fixer shall be in attendance to correct any reinforcement displaced by the concreting operation.

Water shall be removed from excavations and formwork prior to placing of concrete.

04.2.3 Curing

Cover concrete with a layer of sacking or similar absorbent material and keep damp for 7 days after placing. Allow curing time not less than that recommended in Table 6.5 of B.S.8110 Part 1.

04.2.4 Concreting in Cold Weather

Do not concrete when air temperature falls below 2 degrees Celsius.

Follow provisions of Clause G.11.7 TO C.P.110.

4.3 Mortar

04.3.1 General

A cement, hydrated lime, sand mortar in the proportions **1: 2: 9** shall be used for internal work, rendered exterior walls and other locations of moderate exposure.

A stronger cement, hydrated lime, sand mortar is to be used for masonry facings, or work below DPC level or other exposed locations. Cement Mortar shall comprise 1 part cement, 3 parts sand.

Lime Mortar shall comprise 1-part hydrated lime, 6 parts sand.

Gauged Mortar shall comprise 10 parts lime mortar to 1 part cement.

Strong Gauged Mortar shall comprise 5 parts lime mortar to 1 part cement.

Mortar shall be mixed on a proper boarded platform, turned twice dry and twice wet, or by means of an approved mixer. Ingredients shall be properly measured in gauge boxes in quantities sufficient for one day use. No knocking up the following day will be allowed.

04.3.2 Pointing

Where indicated, facing blockwork generally and internal fine textured finished blockwork shall be pointed with a half-round or "bucket handle" joint. Pointing should be carried neatly pointed.

04.3.3 Control Joints

Shrinkage joints are to be located as shown on the general arrangement drawings. Joints are to be sealed with a two-part polysulphide sealant of a similar colour to the facing.

4.4 Blockwork

04.4.1 General

Blocks shall conform to BS EN 771-3.

Compressive strength to be 5Kn unless stated otherwise, sizes (length x width x height): 440 x 100 x 215 mm.

All joints to be flush and stretcher bond.

04.4.2 Concrete Brickwork

Bricks shall be to BS EN 771-3. Finish of bricks to match existing and to be approved by providing samples prior to commencement.

Nominal size to be 215 x 103 x 65 mm and compressive strength of 5Kn.

Allow weep holes every fifth perpend.

04.4.3 Internal blockwork

Where indicated internal block work for painting, is to be "fair-faced" concrete block work. Fair-faced block work is deemed to mean selected "fine textured" concrete block work as supplied by Roadstone Masonry Ltd. or equal approved, not dense concrete masonry.

Common blocks will only be allowed in partitions and walls which are to be plaster finished or in plant areas.

Where lightweight block work walling is called for, use only approved blocks by Roadstone or Quinn Concrete or equal approved. Where such block work is called to remain un-plastered but decorated, such block work must be "fair-faced" or "fine-textured" quality.

04.4.4 Wall ties

Supply and fit stainless steel cavity wall ties at 450mm cs vertically and 750mmcs horizontally. Allow 1 every course with side of reveals.

04.4.5 Wall vents

Supply and fit proprietary vent cover to match external finish, to be approved by the architect.

4.5 Heads and cills

04.5.1 General

Supply and install concrete heads and cills to BS EN 845-2. Place on mortar bed to match adjacent work. Prop heads at not more than 1.2 m centres to prevent displacement during construction. Retain props in position for not less than 14 days or until mortar has matured, whichever is longer. All to comply with manufacturer's instructions.

04.5.2 Steel lintels

Steel lintels to comply with BS EN 845-2. All to comply with manufacturer's instructions.

5. Plasterer

5.1 Cement & Sand

The cement shall comply with I.S. 1:1963 and the sand shall comply with B.S. 1198:1955. All sand shall be delivered to the site washed and free from all impurities.

5.2 Gypsum Plaster

The gypsum plaster shall comply with I.S. 27: 1975, and strictly with the manufacturer's instructions and recommendations for use.

Hardcoat

Where indicated on the drawings, Gypsum Hard coat or equal approved to be used. Shall comply with EN 13279-1 types B4/20/2 and C3/20 and be manufactured under a quality system independently audited and certified as conforming with ISO 9001: 2000.

Performance Fire Protection: Plaster to be non-combustible when tested in accordance with relevant EN and BS standards, achieving Euroclass A1 and satisfying the requirements for Class 0 surfaces in the National Building Regulations. Plaster shall provide good fire protection due to the unique behaviour of gypsum in fire. When gypsum-protected building elements are exposed to fire, dehydration by heat (calcination) occurs at the exposed surface and proceeds gradually through the gypsum layer. Calcined gypsum on the exposed face adheres tenaciously to uncalcined material, retarding further calcination which slows as the thickness of calcined material increases. Once the gypsum layer is fully calcined, the residue acts as an insulating layer while it remains intact.

Air-tightness: The application of a system such as or equal to 11mm Gyproc Hard Coat + 2mm Gyproc Skimcoat finish plaster over 100mm Irish manufactured concrete blocks, laid on edge, shall offer an air permeability performance of 0.03m³/h.m² (50pa) Thermal resistance 11mm Gyproc Hard Coat with a final coat of 2mm Gyproc finish plaster (total thickness 13mm) has a thermal resistance(R) of 0.04m²K/W.

Skimcoat

Where indicated on the drawings, Gypsum skimcoat or equal approved to be used. Plasters shall comply with EN 13279-1 type B1/20/2 and be manufactured under a quality system independently audited and certified as conforming with ISO 9001: 2008. Plaster to be non-combustible when tested in accordance with relevant EN and BS standards, achieving Euroclass A1 and satisfying the requirements for Class 0 surfaces in the National Building Regulations.

Plasters are not suitable for plastering onto frozen backgrounds but may be used under frosty conditions provided that, after plastering, the surfaces are adequately protected from freezing. During the application of gypsum plasters in hot and/or dry conditions, care should be taken to ensure that rapid loss of water is avoided. Gypsum plasters require a proportion of the mixing water to set and achieve full strength. If the water is dried off too rapidly, the strength of the plaster will be impaired. Effect of condensation and other moisture should be protected from continuous exposure to moisture. Prolonged or repeated exposure to moisture may cause a loss of strength and/or adhesion.

5.3 Plaster Boards

Plaster boards shall comply with I.S. 41:1975 and strictly with the manufacturer's instructions and recommendations for use. Note that the fixing of plasterboards has been taken from the Carpenter and Joiner Section for convenience.

5.4 Mixing

All mixing to be done on a clean platform or in a clean mixing box or in a mechanical mixer. Only clean water to be added. No other admixture is permissible except where otherwise specified.

5.5 Diathonite

Application Thicknesses

The minimum application thickness of Diathonite plaster is 15mm. It should be built up in 15-25mm layers to the required total thickness, generally one layer of Diathonite per day. A typical thickness of 40-60mm improves the thermal performance of the wall by 3.5-4.5 times.



For thicknesses of 60mm or more, Diasen [Polites 140](#) reinforcing mesh must always be used. This should be applied when half the total thickness of Diathonite has been applied (and it is still wet). So, for 70mm total thickness, you must apply 35mm of Diathonite, then [Polites Mesh](#), then the remaining 35mm.

For application on a ceiling, the maximum thickness is 30mm. This should be applied in two 15mm layers with reinforcing mesh in between. Reinforcing mesh must always be used when applying Diathonite to a ceiling.

Drying Times

When applying multiple layers of Diathonite, each layer of plaster should be left for 24-48 hours before applying the next layer. 24-48 hours is typical, but if you leave more than 24-48 hours between layers, the Diathonite may dry out a bit too much. If the previous layer is too dry, Diathonite applied on top may peel away or "bounce off" the wall when applied. In this case a "spatter" coat can be applied to create a good key for your next layer. Wait a few hours after applying the spatter coat, then apply your next layer as normal.

A spatter coat is very small amounts of Diathonite (in tiny lumps) thrown or sprayed onto the wall to create a patchy texture of lumps on the surface. The spattered Diathonite is too thin and lightweight to fall off and after a few hours will provide an excellent key for the next normal layer to be applied over the top.

If the next layer is applied too soon, you may find the Diathonite slides off or slumps towards the floor. In that situation, simply wait a few hours and try again.

Once you have applied the final layer of Diathonite, it must be allowed to dry thoroughly before applying Diasen [Argatherm finishing plaster](#). At 20°C and 40% relative humidity, we estimate Diathonite will dry at a rate of approximately 2mm per day. So, 40mm of Diathonite, will usually dry in around 20 days. As the drying time does vary based on environmental conditions each day, it is best to look at the surface; if it looks light grey all over, with no darker areas, it is ready for the finishing plaster.

As Diathonite is capillary active, applying the finishing plaster before the Diathonite has dried sufficiently can increase the risk of moisture, minerals, and tannins (from the cork) being drawn into the final finish. To avoid this and reduce the risk of stains forming on the finished surface, do not apply your finishing plaster too soon! If you do apply it too soon, staining should disappear after a few months once the Diathonite has fully dried and moisture levels in the wall return to normal.

Like all plasters, care should be taken when plastering during heat waves or when temperatures approach 5°C or when the plaster is directly exposed to prevailing winds. Please be aware, if the temperature is lower than 20°C or relative humidity is higher than 40%, drying time and the time between layers will be longer. In higher temperatures or lower humidity or if the Diathonite is exposed to persistent winds or direct sunlight, the drying times will be less. If you experience or expect to experience extremes of temperature, weather, or humidity during and after installation, always consult our technical team for advice before commencing work.



6. Carpenter / Joiner

6.1 Materials

06.1 Timber

All timber used for carpentry work, joists, rafters, trimmers etc., shall be timber of the best of its available type and quality and shall be to IS 444 (old SR 11).

The timber to be as specified for individual items.

06.2 Plywood

All plywood for internal use will be grade I -2BR and conform in all respects with BS 1455 1972, and bonding between veneers will be as defined in BS 1203 1963. All plywood for external use will be Grade 1 -2WBR.

06.3 Chipboard

All resin bonded wood chipboard will confirm in all respects with B.S. 2604 and supplied by Munster Chipboard or other equal or approved manufacturer.

06.4 Medium Density Fibreboard (MDF)

MDF shall be supplied by Medite Ireland Ltd., or other equal manufacturer. MDF shall comply in all respects with B.S. 1105: M81. Amended 1985.

Sheet quality shall be plain grade, exterior grade or fire-resistant grade as set out on the detail drawings.

6.2 Moisture Content

The Contractor is responsible for ensuring that the moisture content of the timber for carpenter's work and joinery is appropriate to the condition of which the material is to be employed.

The moisture content of structural timber shall be not more than 16% +1- 2% at the time of fabrication and erection and shall be maintained until completion within 5% of the expected equilibrium moisture content of the building in use.

All to conform to B.S. 1186 Part 1: 1971, & EN 942 note in respect to moisture content.

6.3 Free from defect

Timber for carpentry and joinery shall be entirely free from decay and insect attack and comply in all respects with the requirements of B.S. 1186 Part 1 & EN 942.

Any timber splitting or opening to the extent of 1mm width within the contract maintenance period shall be replaced.

6.4 Jointing & Notching

The joinery shall be put together with all necessary tenoning, morticing, grooving, tonguing, rebating, housing, and all other labours necessary for carrying out the work in a proper and workmanlike manner, including for the construction of all linings and framings and their fixings into the building.

The joiner shall supply all plates, screws, nails, and other items required for the proper execution of the work.

All notching or cutting away of joists or other structural timbers shall be agreed with the Architect before any work is put in hand.

The word "framed" as applied to woodwork shall be understood as inclusive of all the best-known methods of joining woodwork together, i.e., by mortice or tenon, dovetail or other methods.

6.5 Preservation

All structural timber shall be pressure impregnated.

Cut ends to be thoroughly treated before fixing with like material, brush applied.

A certificate to this effect will be sought from the contractor by the Architect.

6.6 Finishes

The selected hardwoods (solid and veneers) for use in the works are as follows:

Doors and Frames: Cherry

Interior Fixtures: Cherry

The door joinery fixtures are to be finished by staining with selected non-fade ground stain and coating with 3 no. coats clear satin finish lacquers, Sadolin Holdex or equal approved.



7. Roofer N/A

7.1 General

7.2 Roof System

Roof System to include 20-year Insurance backed Warranty.

Upon the completion of the works, the Contractor will furnish a warranty for the works for both the material installation and workmanship. This warranty will be a full and unconditional warranty (except for routine wear and tear) for the completed roofing installation.

The warranty shall be in two parts, the first supplied by the manufacturer of the roofing material against their failure and the second part shall be provided by the Roofing Contractor himself, which shall warranty his installation works and workmanship against defects.

The warranty in respect of the workmanship will be in a form to be approved by the Architects for a similar duration to above.

Proposed warranty form should be included with completed Forms of Tender.

The roof system must support all the necessary loads as indicated on Engineers drawings and act the external and internal walling elements to provide an integrated structure.

The flat roof shall be laid at a fall of not less than 1:50 towards the rainwater outlets as indicated on the drawings. The fall may be created using timber firing pieces on top of the rafters or using tapered insulation min120mm.

The roof is to be constructed in accordance with the Engineers drawings and the manufacturer's specification and recommendations.

The specialist roofer shall be fully competent and licensed to both carry out the works and to ascertain whatever additional works are necessary over and above those indicated on the drawings to successfully construct the roof.

All roofs are to be finished with proprietary roofing finishes except as noted elsewhere.

The installation is to be carried out and completed in strict accordance with the manufacturer's recommendations.

The contractor shall include for all trims, flashings, upstands, and ancillary items to fully complete the roof as indicated on the drawings and as supplied by the manufacturing for the specified locations and uses.

All such items are to be included in the contractor's tender.

7.3 Roofing Membrane

7.3.1 General

Roofing membrane to be multi-layer, synthetic roof waterproofing sheet based on premium-quality polyvinyl chloride (PVC) with inlay of glass non-woven suitable for mechanically fastened roofs.

7.3.2 Approvals and standards required

Polymeric sheets for roof waterproofing according to EN 13956, certified by notified body 1213-CPD-4125/4127 and provided with the CE-mark

Reaction to fire according to EN 13501-1.

External fire performance tested according to ENV 1187 and classified according to EN 13501-5: BROOF(t1)

Fire behaviour in accordance with DIN 4102/part 1, class B2.

Resistant to sparks and radiant heat in accordance with 4102/part 7

Official Quality Approvals and Agreement Certificates and approvals

Monitoring and assessment by approved laboratories.

Manufacturers Quality Management system in accordance with EN ISO 9001/14001.

Production according to Responsible Care policy of Chemical Industry.

7.3.3 Product Data Sheet

07.3.3.1 General

1.5 mm Sika-Trocal Type S, SG and SX (or equal approved) membrane multi-layer, utilising laminated metal discs and thermally broken fasteners to secure both the membrane and the insulation.



Cavan Office:
 Navan Office:
 Telephone number:
 e mail:
 vat number:

1 Farnham St, Cavan, Co Cavan.
 7 Clonard House, Market Square, Navan, Co Meath.
 0469058173
 info@gcal.ie
 IE 3415637RH



07.3.3.2 Appearance / Colours

Surface: slightly structured.

Colours: Top surface: slate grey (nearest RAL 7015); Bottom surface: dark grey.

07.3.3.3 Packaging

Packing unit: 12 rolls per pallet,

Roll length: 15.00 m and 20.00 m.

Roll width: 1.10 m and 2.00 m.

07.3.3.4 Storage Conditions / Shelf-Life.

Rolls must be stored in a horizontal position on pallet and protected from direct sunlight, rain and snow.

Product does not expire during correct storage.

07.3.3.5 Technical Data:

Product Declaration EN 13956:

Visible defects Pass EN 1850-2:

Length 15.00 / 20.00 m (- 0 % / + 5 %) EN 1848-2:

Width 1.10 / 2.00 m (- 0.5 % / + 1 %) EN 1848-2:

Straightness ≤ 30 mm EN 1848-2

Flatness ≤ 10 mm EN 1848-2:

Effective thickness 1.5 mm (- 5 % / + 10 %) EN 1849-2:

Mass per unit area 1.9 kg/m² (- 5 % / + 10 %) EN 1849-2:

Water tightness Pass EN 1928:

Reaction to fire Class E EN ISO 11925-2, classification to EN 13501-1.

7.3.4 Fixing**07.3.4.1 Fasteners Calculations**

The number of fasteners required to secure the membrane and insulation in place determined by calculation of the size and location of the various zones of influence of wind loading upon each individual roof.

To generate these calculations Sika-Trocal provides its Licensed Contractors with access to Internet based calculation software, enabling them to work out the optimum number of fasteners required to secure the roof against wind loads on a project-by-project basis; avoiding 'rules of thumb' or guess work.

07.3.4.2 Ancillary Products

- Sika-Trocal® S, 1.5mm unreinforced sheet for detailing
- Moulded corner pieces, prefabricated corners and pipe flashings
- Sika-Trocal® Metal Sheet Type S
- Sika-Trocal® Cleaner L 100
- Sika-Trocal® Welding Agent
- Sika-Trocal® Seam Sealant
- Sika-Trocal® C 733 (Contact adhesive)

7.3.5 Application Details**07.3.5.1 Substrate Quality**

The substrate surface must be uniform, smooth and free of any sharp protrusions or burrs, etc. Sika-Trocal® SG, 1.5 mm must be separated from any incompatible substrates by an effective separation layer to prevent accelerated ageing. Prevent direct contact with bitumen, tar, fat, oil, solvent containing materials and other plastic materials, e.g. expanded polystyrene (EPS), extruded polystyrene (XPS), polyurethane (PUR), polyisocyanurate (PIR) or phenolic foam (PF) as this could adversely affect the product properties.

07.3.5.2 Application Conditions / Limits

Temperature The use of Sika-Trocal® SG, 1.5 mm membranes is limited to geographical locations with average monthly minimum temperatures of -25 °C. Permanent ambient temperature during use is limited to +50 °C. Not compatible with direct contact to other plastics, e.g. EPS, XPS, PUR, PIR, PF. Not resistant to tar, bitumen, oil and solvent containing materials.

07.3.5.3 Installation Method /Tools Installation procedure

According to the valid installation instructions of manufacturer for Sika-Trocal® Stypes for mechanical fastened system.

07.3.5.4 Fixing Method

Mechanically fastened.

The roof waterproofing membrane is installed by mechanical fastening in seam overlaps or independent from overlaps. Fully adhered junction area. The roof waterproofing membrane is bonded to substrate by contact adhesive Sika-Trocal® C733. Seam overlaps are welded by hot air or cold welding.

07.3.5.5 Welding Method:

Overlap seams are welded by electric hot welding equipment, such as manual hot air welding machines and pressure rollers or automatic hot air welding machines with controlled hot air temperature capability. Welding parameters including temperature, machine speed, air flow, pressure and machine settings must be evaluated, adapted and checked on site according to the type of equipment and the climatic situation prior to welding. The effective width of welded overlaps should be minimum 20 mm. If local weather conditions allow cold welding of sheet overlaps with Sika-Trocal® Welding Agent, it is permitted for Sika-Trocal® SG 1.5 mm with mechanically fastened system in overlap or independent from seam. The effective width of welded overlap by cold welding should be minimum 30 mm. The seams must be mechanically tested with screwdriver or steel needle to ensure the integrity/completion of the weld. Any imperfections must be rectified by hot air welding. Edges must be sealed by Sika-Trocal® liquid PVC.

07.3.5.6 Notes on Installation /Limits

Installation works must be carried out only by Sika instructed contractors for roofing.

Temperature limits for the installation of the membrane:

Substrate temperature: -25 °C min. / +60 °C max. for hot air welding

+5 °C min. / +60 °C max. for cold welding

Ambient temperature: -15 °C min. / +60 °C max. for hot air welding

+5 °C min. / +60 °C max. for cold welding

Installation of some ancillary products, e.g. contact adhesives/thinners is limited to temperatures above +5 °C. Refer to the respective Product Data Sheets.

Special measures may be compulsory for installation below +5 °C ambient temperature due to safety requirements in accordance with national regulations.

Consult the local Product Data sheet for the exact description of the application fields. The product does not fall within the EC-regulation of hazardous goods. As a result, a material safety data sheet following EC-Guideline 91/155 EWG is not needed to bring the product to the market, transport or use it. The product does not damage the environment when used as specified.

07.3.5.7 Protective Measures

Fresh air ventilation must be ensured, when working (welding) in closed rooms. Local safety regulations must be observed. Transportation Class The product is not classified as hazardous good for transport.

Disposal The material is recyclable. Disposal must be according to local regulations.

7.4 Roof Flashings

In the case of lead sheet flashings, patination oil shall be applied immediately prior so final positioning, to both or all surfaces of the metal to reduce the risk of possible staining of the slates.

7.5 Lead

Lead generally to be rolled, 2 to 2.24mm thick, (Code 5), Pre-treated by applying chalk slurry coat to underside of lead and allow to dry before laying, followed by chalk paste coat after bossing but before final fixing. Lay lead generally on substrate of 19mm WBP plywood to BS636 on battens at 450mm c/c On underlay 220 g/m² needle punched polyester geotextile. All joints to be in the direction of fall and made up on a wood cored roll with spacing on the centre line of gutter. All outlets to be lead welded flashing to internal rainwater pipe.

7.6 Open Metal Valley

Ensure that valley boards and tilting fillets provide full support for metal valley Underlay: Geotextiles as approved by Lead Sheet Association. Type of lead Code 5 in lengths not exceeding 1500 mm and with

laps of not less than 200 mm. Fixing: Dress lead sheet over, and beyond, tilting fillers and melt edges. Nail top edge of each sheet. Dress bottom end neatly into eaves gutter. Cut underlay to rake and dress over tilting fillets to lap onto metal valley. Ensure that the roof underlay is not laid under metal. Cut extra-wide slates neatly and fix with a minimum gap 125 mm wide centred on valley.

7.7 Side Abutment

Turn underlay not less than 100 mm up abutment. Cut slates as necessary and interleave with metal soakers. Fix soakers by turning down over the head of each batten. Each soaker to be equal in length to the gauge plus the slate head lap plus 25 mm. Fix slates close to abutment to enable a weather tight junction to be formed by metal cover flashing.

7.8 Top Edge Abutment

Turn underlay not less than 100 mm up abutment. Finish slating with a head-nailed short course to maintain gauge. Fix slates close to abutment to enable a weather tight junction to be formed by metal apron flashing.

7.9 Soffit Ventilated Eaves

When using a timber fillet, fix a strip of IS 36, Type felt or comparable durable underlay as eaves reinforcement to underlap first full course of roof underlay. Dress roof underlay and eaves reinforcement down into gutter. Fix eaves slates with tails projecting 50 mm over the gutter or to the centre of the gutter, whichever dimension is the lesser. The first under eaves slate course to be equal in length to the batten gauge. The second under eaves slate course to be equal in length to the batten gauge plus the slate head lap.

7.10 Roof Window

Install roof window in strict accordance with manufacturer's instructions. Careful detailing of the roof underlay must be undertaken to ensure free drainage and no ponding of any moisture at head of roof light. Turn underlay not less than 100 mm up against window surround and cover with integral flashing/soakers all round to form a weather tight junction

8. Insulation

Refer to technical calculations included in the folder marked insulation and repeated below. Technical data from an example of an approved system are enclosed. All insulation products offer technical performance based on the adherence to individual manufacturers' guidance. Therefore, the contractor must familiarise themselves with the chosen system and comply in full with all the requirements that attach to that product system. The detailed drawings indicate the varying thicknesses of insulation required to meet the necessary standard. Adhere to the thicknesses set out in the drawings. The general information relating to the specification for the appropriate specification/materials required are set out below.

08.1 General

U-values will be required to be calculated in accordance with the 1075 Guidebook A of the Institution of Heating and Ventilating Engineers.

08.2 Floor slab

<<XX>>mm rigid floor insulation, Polyisocyanurate, PIR Xtratherm, XT-UF or Kooltherm K3 Floorboard or equal approved

Thermal conductivity (insulant thickness) <<XX>> w/m.k (25–44 mm)
 <<XX>> w/m.k (≥ 45 mm)

Compressive strength at 10% compression- 120 Kpa

Facings - composite foil.

Water collecting at the base of the insulation boards must be drained away by filter drains located around the perimeter of the wall. Filter drains to consist of, a perforated / porous drainage pipe positioned at foundation level surrounded by a free draining aggregate e.g. coarse gravel. A geotextile membrane must be placed around the gravel to prevent fines blocking the drain. Depending upon ground conditions, drains may be connected to surface drainage systems or soakaways.

Core - Premium performance rigid thermoset modified resin insulant manufactured with a blowing agent that has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP).

08.3 External walls

08.3.1 Cavity

<<XX>>mm <<INSERT>> with a thermal conductivity of <<XX>> W/mK across all thicknesses.

Manufactured with a blowing agent that has zero ODP and low GWP, for cavity walls with a 10 mm residual cavity.

08.3.2 Insulated plasterboard, where shown.

50mm insulant thickness+12.5mm plasterboard

Kingspan Kooltherm K118 insulated plasterboard with a fibre-free rigid thermoset phenolic core. The 12.5mm plasterboard bonded to insulation board's front surface and a composite foil based facing on its reverse surface. Suitable for mechanically fixed or plaster dab / adhesive bonded dry-lining.

08.3.3 External Stonewool Insulation

Xtratherm's range of non-combustible, Euroclass 'A1' stonewool insulation SW/RS. Stonewool Rainscreen insulation is suitable for use in ventilated facade, rainscreen and framing applications and closed systems such as curtain walling.

The rainscreen insulation shall be Xtratherm Stonewool 100mm manufactured to BS EN 13162:2012+A1:2015.

Breather membranes if specified within the system, will provide additional protection.

08.4 Roof

<<XX>>mm <<INSERT>> with a thermal conductivity of <<XX>> W/mK across all thicknesses.

Manufactured with a blowing agent that has zero ODP and low GWP, for cavity walls with a 10 mm residual cavity.

Certification: BBA Certification No. 11/4878. Issue date: 15 August 2015 BS EN ISO 9001 Quality Management System BS EN ISO 14001 Environmental Management System.



Vapour Control Layer should be used below the insulation. For mechanically fixed boards, a minimum vapour control layer of a 1000-gauge polythene layer lapped and sealed with double-sided tape should be used below the insulation. At vertical upstands and penetrations, the VCL should be turned up and sealed to encapsulate the insulation layer prior to the roof finish being completed.

Bonding boards to the vapour control layer: the minimum vapour control layer should consist of a 3B type felt to BS747 Reinforced bitumen sheets for roofing. Specification or BS8747. Reinforced bitumen membranes (RBMs) for roofing. Other proprietary systems may be used subject to approval. Where the vapour control layer is to be bonded separately, sufficient adhesion to the substrate should be made to ensure correct resistance to wind uplift. Contact the system manufacturer for details.

Fire Performance: the fire rating when tested to EN 13501-5 and BS 476 Part 3 'External Fire Exposure Roof Test' will be dependent upon waterproofing system specified.

Roof Design Consideration should be given to the recommendations of BS 4841: Part 3 and those of the Single Ply Roofing Association.

Laying (Concrete Deck): Decks should be dry and clean of debris and laid to correct fall. The boards can be secured using approved mechanical fixings and washers, with boards laid with a break-bonded pattern. Joints should be closely butted. Alternatively, the boards can be adhered to the decking with approved adhesive systems.

BS 6399 Part 2 should always be consulted. During the construction process, the insulation should be protected from rain penetration during breaks in the process.

Typical Physical Characteristics:

- Property Units Density (Foam Core)
- Compressive Strength Thermal Conductivity* 32kg/m³ >150kPa @ 10% Compression.
- U-value: as per the insulation calculation sheet.

08.5 Soffit

The soffit insulation shall be Xtratherm Safe-R SR/ST 100mm manufactured to EN 13166 by Xtratherm, comprising a rigid Phenolic core between low emissivity foil facings. To be installed in accordance with instructions issued by Xtratherm.

Insulation Phenolic Rigid Foam. Standard BS EN 13166. Certification BS EN ISO 9001 Quality Management System BS EN ISO 14001 Environmental Management System.

Safe-R Soffit board provides effective thermal and fire performance solutions in structural ceiling applications in commercial and residential buildings. High performance phenolic insulation board is faced with low emissivity foil facings

Superior Performance Phenolic Insulation Fire Classification B-s1, d0 Foil Faced Finish.

Safe-R Soffit is finished with a foil facer which can be taped using a proprietary foil tape. The product achieves a thermal conductivity as low as 0.020 W/mK and has a Euroclass B fire classification.

Typical Physical Characteristics:

Property & Units Thermal Conductivity 0.020 - 0.021 (W/mK)

Compressive Strength >120 (kPa)

Reaction to Fire Euroclass B-s1, d0.

Fixing Directly to Concrete

Where applicable, ensure cavity wall insulation has continued past the soffit insulation to reduce Thermal Bridging.

Install Safe-R Soffit onto the soffit ensuring all joints are supported. Ensure joints are tightly butted. Any gaps or service penetrations should be addressed with propriety fillers and components in accordance with fire engineers' specifications.

Fix Safe-R Soffit to soffit with approved fixings*, ensuring the fixings penetrate the substrate by a minimum of 40mm. Generally, 12 fixings (min shank diameter of 5.2mm) per board are required. Fixings should have a head diameter of at least 35mm. Distribute fixings evenly across the board, at max 600mm across and 800mm along, at a minimum of 50mm from the board edge and a maximum of 150mm. Refer to fixing patterns below for indicative purposes.

Boards joints can be covered with a suitable cover strip.

Fixing to Timber Battens/ Proprietary Systems



Cavan Office:
 Navan Office:
 Telephone number:
 e mail:
 vat number:

1 Farnham St, Cavan, Co Cavan.
 7 Clonard House, Market Square, Navan, Co Meath.
 0469058173
 info@gcal.ie
 IE 3415637RH



Treated timber battens may be used to provide an even surface when direct fixing to the soffit is not possible. Battens should be treated timber.

The battens, measuring minimum 50mm x 40mm, should be mechanically fastened at minimum 600mm centres.

Fix Safe-R Soffit to the timber battens with approved fixings*, ensuring the fixings penetrate the substrate by a minimum of 40mm. Ensure joints are tightly butted and fill any gaps with expanding foam. Generally, 12 fixings (min shank diameter of 5.2mm) per board are required. Fixings should have a head diameter of at least 35mm. Distribute fixings evenly across the board, at max 600mm across and 800mm along, at a minimum of 50mm from the board edge and a maximum of 150mm. Refer to fixing patterns above for indicative purposes.

When using proprietary metal grid systems, refer to manufacturer for fixing instructions. Board joints can be covered with a suitable cover strip. * Fixing type and specification should be verified by the fixing manufacturers' design, to take account of topographical and fire considerations. Account should be taken of any Thermal Bridging through the fixings as should the effect of any supporting beams.

08.6 Airtightness

As per the test methods prescribed under Building Regulations TGD-L the new building is to achieve an airtightness provision under a pressure test result of no worse than 5m³ /(h.m²)@50Pa. Method & responsibility for design & Installation of air tightness rests with the main contractor.

Provide proprietary tape seal at all windows junction of plaster to achieve air tightness. At Floor Level install select tape as per detail. Tape for sealing to be Isover Vario or Pro Clima Simular or similar approved product installed in strict compliance with manufacturers' instruction. The recommendations contained with the Guide to Acceptable Construction Details (ACDs) Limiting Thermal Bridging and Air Infiltration as published by the The Department of the Environment, Heritage and Local Government to be fully complied with in respect of the Construction to achieve the required air tightness result.

Air Tightness Test: Contractor to undertake a complete air tightness test of the entire building by approved and certified UKAS-accredited and BINDT registered member of the Air Tightness Testing and Measurement Association (ATTMA), Testing is conducted based upon ATTMA Technical Standard 1 CIBSE TM23 or EN 13829. The test shall be deemed complete when the standards required at the beginning of this paragraph have been met.

08.7 Insulation calculation sheets

<<INSERT INSULATION CALCULATION SHEETS FOR WALLS, ROOFS< FLOORS>>>

9. External Finishes

09.1 Sand and cement render

09.1.1 Substrate: Concrete block work, refer to section 3.4.

09.1.2 Preparation:

Bonding agent. Cement: sand mortar: Type: Ready-to-use mortar render. Pigment: White Sand / Cement render. Mix (cement: sand): First and second coats to comprise scud and scratch coat respectively mix 1:4–4.5. Cement to IS1 and BS EN 197-1.

Thickness (excluding dubbing out and keys):

3-5 mm scud coat- sand and cement

8-12 mm first under coat – sand and cement and plasticiser

6-8 mm second coat – plain finish

09.1.3 Other requirements:

Screen sand through 3 mm mesh sieve. Thickness: 7–8 mm. Finish: Finish with a dry wood float as soon as wet sheen has disappeared.

Deviation of render surface: Measure from underside of a 2 m straight edge placed anywhere on surface. Permissible deviation (maximum): 2 mm.

09.1.4 Accessories:

Supply and install stainless plaster stop steel beads to all internal, external corners and edges of plaster where it meets exposed masonry/brick. Stainless steel to BS EN 10088-1, grade 1.4301. Secure, using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate. Beads/ stops for external render: Fix mechanically. After coatings have been applied, remove surplus material while still wet, from surfaces of beads/ stops exposed to view.

Standard render is 1: 4 Cement: Sand. Standard mortar is 1: 5-6 Cement: Sand I.S. EN 998 series- Specification for Rendering and Plastering Mortar and SR 325 is the current guidance document for Structural Use of Unreinforced Masonry EN 13914 – 1 is the current guidance document for applying Renders / Plasters.

All external plaster shall be subject to approval based on sample panel to be presented to the architect. No work to take place when the ambient temperature is below 4C and when the temperature is 6C but falling.

10. Windows & External Doors

10.1 General

Supply and fit new windows, external doors and curtain walling in accordance with the window/external door schedule, architect's drawings and specification as below:

10.1.1 Windows

Windows to be used are <<INSERT>> or equal approved, composite aluminium and timber system achieving heat transfer coefficient of glass – <<XX>> W/m²K

Norms and Values CE: EN 14351-1:

DIN EN 12207 Air Impermeability Class 4

DIN EN 12208 Driving Rain Resistance Class E1200

DIN EN 12210 Wind Load Resistance Class C4

DIN EN ISO 10077-2 $U_w \geq 0,69 \text{ W/(m}^2\text{K)}$

DIN EN ISO 717-1 Noise Control: $R_w (C; C_{tr}) = 48 (-2; -6) \text{ dB}$

DIN EN 1627 Burglary Resistance: RC1N, RC2N, RC2, RC3N

DIN 18008-4 TRAV Anti Drop Device: Category A, B, C

10.1.2 External doors

Doors to be used are <<INSERT>> or equal approved, composite aluminium and timber system achieving heat transfer coefficient of glass – <<XX>> W/m²K

Norms and Values CE: EN 14351-1 (TA35 DSE TNA):

DIN EN 12207 Air Impermeability Class 4

DIN EN 12208 Driving Rain Resistance Class 9A

DIN EN 12210 Wind Load Resistance Class C4

DIN EN ISO 10077-2 $U_w \geq 0,83 \text{ W/(m}^2\text{K)}$

DIN EN ISO 717-1 Noise Control: $R_w (C; C_{tr}) = 40 (-2; -6) \text{ dB}$

DIN EN 1627 Burglary Resistance: RC1N, RC2N, RC2

DIN 18008-4 TRAV Anti Drop Device: Category A, B, C

10.1.3 Curtain Walling

Curtain walling to be used are <<INSERT>> or equal approved, composite aluminium and timber system achieving heat transfer coefficient of glass – <<XX>> W/m²K

Norms and Values CE EN 13830:2015+A12020:

DIN EN 12152 Air Impermeability Class AE

DIN EN 12154 Driving Rain Resistance Class RE2250

DIN EN 13116 Wind Load Resistance 2,0 kN/m²

DIN EN ISO 10077-2 $U_w \geq 0,62 \text{ W/(m}^2\text{K)}$

Passive House Certified, PHI Darmstadt

DIN EN ISO 717-1 Noise Control: $R_w (C; C_{tr}) = 48 (-2; -6) \text{ dB}$

DIN EN 1627 Burglary Resistance: RC1N, RC2N, RC2, RC3

DIN EN 13049 TRAV Anti Drop Device: Category A, Class 5

DIN EN 12179 Impact Resistance Class I5/E5

System General Technical Approval DIBt. Z-14.4-669

System Connector Curtain Wall ETA Denmark - ETA-18/0033

DIN EN 1364-1 Fire Resistance: EI30 DIN EN 13501-2

10.2 Design and performance

10.2.1 General

Windows, curtain walling, metal panels, entrance screens, doors, cills, flashings etc. shall exclude wind and rain from the building interior and shall assist in maintaining the desired internal environment. All components are to be manufactured and installed to the general requirements of the tender documents. The tenderer is responsible for the detail sectional design and performance of the completed component and for their resistance to weather to be expected from the above location. Relevant data can be obtained from the Meteorological Services. The system must include all additional profiles to carry out the complete range of solutions required.



- 24mm/64mm low "E" argon filled (90%) glazing units. Safety glass to be min 6.8mm laminated to BS 6262 & BS 6201- Glass in Buildings. All glazing must be installed in accordance with BS 6262 and the double-glazed unit manufacturer's and system supplier's instructions.

10.2.2 Performance Criteria

Windows <<INSERT>>

Doors <<INSERT>>

Curtain Walling <<INSERT>>

- **Formal Requirements for Construction**

The windows in this package are to comprise wood- aluminium windows covered on the outside with metal profiles. They shall have a material composition of wood and metal. The room-side profiles shall be in laminated wood. The wood profiles shall take up the forces of horizontal loads, wind loads, infills, fittings and transfer these throughout the building structure. The metal profiles shall prevent direct weather influences on the wood. The aluminium frame shall be fixed to the wooden frame by means of interchangeable rotary and rotary-clip holding brackets in high quality, temperature resistant, plastic materials. This shall enable tension-free expansion of various materials. The metal profiles shall be provided with a through-going ventilation and drainage system.

- **Wood Construction**

Timber shall be pressure treated laminated pine stained to achieve pine colour and factory finished with translucent coating. Solid panels internally to be pine colour as above or approved equivalent selected and processed in accordance with B.S. 1186 Part 1 of Class 2 grading. Selected for clear finishing from Selects and No. 1 Common or equivalent grading free from knots, stains, discoloration, checks, splits, wane, shakes, compression wood, sapwood, pith, brittle heart, evidence of insect or fungal decay and with straight grain of consistent character, grain slope not exceeding 1:8 and well-seasoned by kiln to 15% moisture content.

The wood construction shall be carried out in conformity with the requirements of DIN 68121. The sashes must be provided with milled glazing strips and the fixed glazing with screwed-in glass strip respectively. The insulation glass edge seal shall be taken up on two sides into the wood rebate. Slots in the wooden profiles to take up the aluminium profiles are not permitted.

- **Aluminium Frame**

The frame profile shall conceal the sash profile insofar that there shall be an even elevation of the frame between fixed glazing and opening elements. The shape of the system construction shall be defined by a slim frame elevation of 50 mm. Between glass and sash profile there shall be a rebate of 12mm depth. The construction is defined as an integral sash. The sash profile can be wider in the case of certain static requirements. Drainage of the rebate area shall be by means of concealed punch holes in the bottom profile crosspiece of the frame. Optionally, there can be visible drainage with a cover cap. The corner joints of the aluminium frames shall be welded.

- **Seals**

The blind frame shall have an all-round factory-made seal in high quality TPE or EPDM between the wood frame and wood sash. Where greater driving rain can be expected, an additional seal shall be mounted at the bottom between aluminium frame and aluminium sash.

Glazing on the outside shall be carried out with an all-round outside APTK or EPDM glazing seal. Wedge seals shall be used as external glazing seals in special fixed glazing models. Internally, dry glazing shall be used with APTK or EPDM seals in graduated sealing thicknesses. The system shall be in the form of wet glazing either outside or inside.

- **Surface Coating Aluminium**

Coating shall be carried out in conformity with the valid quality guidelines of the coating of building parts in aluminium of GSB-International GSB AL 631, or QUALICOAT regulations. RAL or DB colour is to be used according to the wishes of the Architect. For anodised surfaces, the corner joints of the aluminium frames are carried out mechanically.

- **Syntha Pulvin Finish**

All aluminium to be finished in Syntha Pulvin to the selected colour in accordance with B.S. 6496.



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Generally, apply a film thickness in the region of 60-100 microns with a minimum of 60 microns in all locations.

With steel components that are coated with zinc or aluminium welding, finishing or dressing back of the coating should be avoided if possible. The metallic coating and the exposed steel may require different pretreatments. Where it is necessary to finish welds, and aluminium pressings, it is recommended that 320 grit is used as the final material.

- **Surface Coating Wood**

Surface treatment of the wooden parts shall be carried out according to the type of wood used, the chosen coating system, and the expected stress to the surface. If no dry layer thicknesses are specified, then the minimum dry layer thicknesses are those of German regulations as follows:

> 30 µm on surfaces to which there is no access and on primed windows

> 50 µm around the building structure connection

> 80 µm for varnish coatings

>100 µm for cover coatings

This also applies to all surfaces beneath metal profiles and sheets which according to the design are not made as water-transfer planes. All other surfaces require full layer thickness for the final treatment. Suitability of other coating systems and layer thicknesses which are based on a reduced climate-related stress factor on wood-metal windows must be documented.

Requirements for the Construction

The following properties and classifications are required as prescribed by the product norms for windows DIN EN 14351-1:

Profile system: batimet TA35 SL, TM50 SE, TA35 DSE TNA, TA35 DSE TNI or equal approved.

Wood types laminated: pine.

DIN EN 12207 Air permeability Class 4

DIN EN 12208 Driving rain resistance Class E900

DIN EN 12210 Resistance at wind force Class C4

Sash Width: 280 – 1.600mm

Sash Height: 280 – 3.000mm

Sash Weight: up to 200 kg as tilt & turn, up to 300 kg as only turn in-out sashes

DIN 18008-4 Anti Drop Device according to TRAV Category A

DIN EN ISO 10077-2 Thermal Transmittance Value: 1.2 W/m²K

DIN EN ISO 140-3 Noise Control: 35-40 dB

DIN EN 1627 Burglar Resistance: n/a

Components shall be durable and perform their function for the life of the building which will be more than 50 years. Planned maintenance will comprise cleaning the internal and external coated surfaces at intervals to be recommended by the sub-contractor and if found to be necessary, replacement of the external silicone seals after a period of not less than 20 years. All components must comply with the codes and standards listed below. Proof of compliance with the following test criteria will be required as a minimum:

10.2.3 Test Certificates

Valid test certificates from recognized institutes may be requested for the window system proposed and the successful tenderer must allow for having one of each type from the production run tested, also for compliance by the Institute of Industrial Research and Standards.

10.2.4 Tolerances

Adequate allowances shall be made for all relevant construction tolerances associated with the building structure. All curtain walling and window fixing brackets shall be designed to provide adequate three-way adjustment which does not rely on the use of packing shims. The degree of adjustment in each direction shall be sufficient not only to accommodate the construction tolerances, but also to ensure that the wall and window elements can be adjusted in level and aligned at the installation stage to produce plumb corners, true horizontal and vertical lines and flat planes free from steps and ridges. Adjustment shall be accommodated using slotted holes combined with serrated faces and locking plates to ensure that slippage does not occur.



10.3 Shop Drawings

Prepare and submit to the architect for approval three copies of shop drawings, two weeks after acceptance of tender.

- Elevation plans and full-size sections.
- Proposed methods of fixing.
- Proposed methods of forming joints.
- Any proposals for fabricating large components in more than one piece.

Note: It should be noted that the method of supporting and fixing the installation as shown on the Architects' drawings is for guidance purposes and as such, must not be assumed to have been designed to provide structural integrity of the system and fixings.

10.4 Standards

Comply with the following codes and standards:

DIN 1055	Design Loads	B.S. 8233	Code of Practice for sound insulation and noise reduction in buildings.
DIN 18055	Air and Rain permeability	B.S.952: Part1 :1978 BS EN 572-1 BS EN 572-2	Glass for Glazing.
DIN 18056	Walls and windows	BS 592 Parts 1,2	Glass
DIN 18202	Dimensional Tolerances	BS 4255, BS 6213	Gaskets + Sealants
DIN 7863	Sealing profiles.	CP 3, Ch 5 Part 2	Wind Loading
DIN 4108	Thermal insulation	BS 6399: part 3	Snow Loading
DIN 4109	Sound insulation	BS 6180	Barriers in and about buildings
B.S.588: Part 1 IS 513 & 1S515: 1981	Performance of Windows Classification for weather tightness.	BS 7543	Durability
(EM 42 1975) IS 588: 1982	Methods of testing windows. Air permeability test.	BS 6037	Suspended Access Equipment
(EM 86 1980)	Methods of testing windows. Water-tightness test under static pressure.	BS 6651	Lightning Protection
IS 514 1981 (EM 77 1977)	Methods of testing windows. Wind resisting test.	BS 5368: Part 1,4 BS 5821 Part 3,	Testing Windows
IS EN 410 1998	Determination of Luminous & Solar Characteristics of Glazing.	BS EN ISO 140-3	Sound Insulation
B.S. 5516	Code of Practice for design and installation of sloping and vertical patent glazing.	B.S. 1527 (1998)	Building hardware for sliding/folding doors.
B.S. 6375 Part 1 & 2	Performance of windows.	Part 1: 1969	Cleaning and Safety.
B.S. 8213 Part 1 & 4	Windows, doors and roof lights.	Part 2: 1970	Durability and Maintenance.
B.S. 5713	Specification for hermetically sealed flat double-glazed units.	Part 3: 1972	Sound Insulation.
B.S. 6262	Code of practice for glazing of buildings.	Part 4: 1972	Fire Hazards Associated with Glazing in Buildings.
B.S. 6262 Part 4	Code of Practice for Glazing of Buildings Safety related to human impact.	B.S. 8200: 1985	Code of Practice for Design of non-load bearing external vertical enclosures to buildings.
B.S. 8000 Part 7	Code of Practice for glazing.	B.S. 152:1972 B.S.152:1972	Glazing and fixing of glazing for buildings.
B.S. 1207	Hollow Glass Block	DOE/BRIS Digest 140 1972	Double glazing and double windows.
BS/EN 12051:2000	Building Hardware - door and window bolts-requirements and test methods	BRE Digest 119	Assessment of wind loads
Insulation Glazing Association (UK) : 1968	Glazing requirements and procedure for double glazing units.	CP 153 Part 1:1969	Windows and rooflights, cleaning safety

B.S.C.P. 151 :1957	Wooden Doors.	B.S. 644	Wood Windows.
B.S. 459	Doors 1951 to 1965 Door and Parts 1 - 4 Inclusive.	Part 1 : 1951	Wood Casement Windows.



B.S. 4787	Internal and External Doorsets, Door Leaves and frames.	Part 2 : 1958	Wood Double Hung Sash Windows.
		Part 3 : 1951	Wood double hung sash and casement windows.
		B.S. 1186 Part 1 :	Quality of Timber.
		Part 2 :	(Fabrication and Jointing).

Note: Tenderers should indicate if their system has conformed to other standards.

Note: All materials shall comply with the relevant British/Irish and European Standards as appropriate, and the latest published amendments made to the above listed standards at the time of fabrication. The standards shall apply whether they are listed.

10.5 Specialist Firms

The work described in this section shall be carried out by competent persons, employed by specialist firms, skilled in the fabrication and erection to the standards and codes referred to herein.

10.6 Workmanship

- 10.6.1** Aluminium-timber doors, windows and curtain walling to be designed and manufactured to a standard which renders them appropriate for use in an environment DD4 exposure rated 'Moderate' as defined in B.S. Draft for Development 4 : 1971 Recommendations for the grading of windows with reference to B.S. 4315 : 1968 Tests of the equivalent grading classification defined in B.S. 6375 : Part 1 Classification for Weather tightness with reference to B.S. 5368 Parts 1 to 5 inclusive.
- 10.6.2** External timber to be designed and manufactured to a standard which renders them appropriate for use in an environment rated 'Moderate' as for 12.5.2 (c) above and equivalent to strength graded 1 as defined in BRE Paper 31/78: The performance of timber doors.
- 10.6.3** External aluminium-timber doors to be manufactured from components cut to length from kiln-dried timber, machined to section and jointed. Frame head, jamb and sill shall be scribed together with either mortice and tenon joints or combed joints. Frame transoms scribed and framed with M and T joints. Horns to be left projecting at frame head and sill. Pieces to be cramped together to the square and flat. Temporary brace and stretcher fitted to frames for stability in transit and erection. Surfaces shall be smooth, true and clean. Door rails to be morticed and tenoned; door munitions, intermediate rails and glazing bars can be stub tenoned. Dowelled joints not to be used without prior approval. Glazing beads to be located internally only. Assembly and gluing shall be carried out in jigs. Nails, staples and screws to be non-corrosive, counter sunk and holes putty filled.
- 10.6.4** Windows, doors and curtain walling to be manufactured with components of dimensions suitable to their application, exposure rating, strength grade and glazing requirements. Finished outside dimensions of timber components not to be less than the following unless otherwise approved:
- Doors:**
 Elevations Standard Sash 100 mm
 Elevations Standard Frame 100 mm
 Depths Standard Wood Profile 78 mm
- Windows:**
 Elevations Standard Sash 11 mm
 Elevations Standard Frame 50 mm
 Depths Standard Wood Profile 78 mm
- Curtain Walling:**
 Elevation Standard 50 mm
 Elevation Wood Cover Cap Profile 50 mm
 Profile Height Standard Cover Cap 17 mm
 Profile Height Cover Cap Special to 250 mm
 Depths of Standard Wood Profile Determined after Structural Dimensioning 60-600 mm.
- 10.6.5** Windows, doors and curtain walling to be fitted with condensation channels and weep holes, throats, water bars, drip mouldings, weathering, bedding grooves and draught sealant strips as appropriate.
- 10.6.6** Window, door and curtain walling frames to be fixed to the sides of masonry jamb screwed to wall surface or by fixing with steel cramps. All fixings and cramps to be high strength non-corrosive. Joint between timber frames and masonry to be sealed with mastic. As set out in IS 196 Parts 1 – 6 as appropriate.

10.7 Joints and Fixing at Walls

Stainless steel metal fixing straps can be used to fix the frames to block walls. Examination of the wall sections proposed must be considered. When shims and packing etc. are required, all materials used should be of aluminium or rust-proof material and all screw fixings must be to the inner leaf.

The window sub-contractor is responsible for ensuring that the builders DPC, which is to be left protruding from the jamb engages in the side of the window frame to give continuity and is compatible with the window manufacturer's mastic.



Because this continuity is so important for the successful weathering of the opes the window Sub-contractor will be held responsible for reporting to the Architect or the Clerk of Works any deficiencies or omissions in the DPC.'s at jamb and sill and should not install windows where the DPC.'s are defective. Wall anchor or plug centres shall not exceed 600mm and shall not be more than 2000mm from the corner of the window.

Low modulus silicone sealant is required to be provided as part of this sub-contract to the joints as shown on drawings.

The Sub-contractor shall include all fixings, cleats, grounds, etc. necessary to complete the installation. Packers and fixing cleats to be in stainless steel or plastic. Fixing to be by means of stainless steel/aluminium cleats fixed by blockwork before plastering. No exposed screw heads will be allowed.

10.8 Ironmongery and Accessories

Doors, windows and curtain walling are to be fitted with hinges, locks, receivers, handles and other devices as scheduled. All ironmongery to be fixed securely with reinforced plates where necessary. All ironmongery to be of robust quality of a type appropriate to its position in the works. Fittings of tried and tested commercial manufacture and design shall be fitted and all alloy components, handles, etc., shall be ground, brushed, anodized and provided with surface protection. All steel components such as rods etc. shall be stainless steel. Adequate screw fixings for all window furniture components shall be ensured, load bearing screws shall be taken through two aluminium walls.

Opening windows shall be fitted with the following as a minimum:

- Two friction wedge type locking mechanisms (per opening sash), operated via a handle,
- Pull Handles with night vent position
- Sliding friction stays hinges restricted to the limit(s) specified in the above codes
- Centrally operated espagnolette multipoint locking system on all doors
- Fold open hold open devices
- Push Plates
- Door closers
- Panic Bolts
- Flush Bolts
- 5 Lever Deadlocks
- Chrome finish

10.9 Rainwater Run-off and Resistance to Staining

The detailed design of the curtain walling and panelled systems entrance screens, doors, cills, closers, casings, copings etc. shall be such as to reduce the risk of non-uniform weathering and localised staining of the external faces of the building.

10.10 Pressings/Flashings

The Sub-contractor shall include for the supply, fixing and sealing of all pressings/flashings described on the drawings in aluminium. Pressings to be finished in Syntha Pulvin as described above. All flashings shall incorporate two positive lines of defence against the passage of rainwater to the interior. The space between the two joints shall be drained to the exterior.

All flashings/pressings shall be fabricated and installed to eliminate the risk of ponding on the upper surfaces and shall be manufactured from minimum 1.6mm thick aluminium or laminated composite panels.

10.11 Other Requirements

- Part M compliant aluminium threshold, door to be approved for use on Secured by Design projects, door sets to be part M compliant.
- Handles to be at the height of 800-1000mm above the floor level as indicated on the drawings.
- Glazed sections to be at 400mm above the floor level as indicated on the drawings.
- Quality to comply with BS644 and BS7950
- Safety glazing on all doors.



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- The rapid and background ventilation characteristics of the openable windows and permanents for background ventilation shall match the requirements of the 1997 Building Regulations Part F.
- Window automation system – Window Master WMX 804 chain actuator to be used with all window types to be used together with $\pm 24V$ control units or control units with MotorLink® can be used together with espagnolette WMB external safety edge can be connected directly to the actuator (actuator version 'E') available with and without UL certification. On large windows up to four actuators can be mounted on the same window – with no need for an external synchronization module. The risk of entrapment is reduced as the actuators are programmed to reverse if they encounter obstacles when closing. The set points determining when the actuators are to reverse are individually adjustable.
- Technical specifications Locking force 3000N Permitted short pressure load when chain has run to end stop 100N Short pressure capacity on motor Max. 150N (e.g. at the beginning of opening: sticky gasket, ice, wind speed).
- Chain opening 50 - 250mm in increments of 10mm, maximum opening depends on the window construction Opening speed 7mm/s (programmable from 3mm/s to 9.5mm/s).
- Sound pressure level ≤ 33 dBA (operational speed: 3 mm/s), ≤ 43 dBA (operational speed: 9,5 mm/s).
- Window types and sizes must be agreed with the window supplier and Window Master.
- Window width Min. 365mm, maximum width depends on the window construction and the number of window actuators.
- Window height Min. 300 / 400mm (see installation suggestions 1 and 3), maximum height depends on the window construction and the number of window actuators.
- Nominal voltage 24 VDC (max. 10% ripple) Voltage 20 - 36 VDC Max. open-circuit voltage Max. 36.
- VDC Current consumption WMX 504 / 504 UL: max. 0.5A WMX 804 / 804 UL: max. 1.0A.
- Operating condition $-5^{\circ}C$ - $+74^{\circ}C$, max. 90% relative humidity (not condensing) Switch-on-duration ED 40% (max. 4min. per 10min).
- Material Lacquered zinc housing with 10mm zinc cromate passivated steel chain and a 1.9m 3-core 0.34mm² cable with fast-in/fast-on connectors for connection to the extension cable WLL WMX 504: 1.9m grey silicone cable in grey (grey and white actuator) WMX 804: 1.9m grey silicone cable in grey (grey actuator) WMX 504 UL / 804 UL: 1.9m UL listed/recognized cable in grey (grey actuator). Colour Aluminium (RAL 9006).
- Weight 1.0kg IP rating IP20 – when surface mounted / IP32 – when concealed Certification Actuators with "U" in the article no. are UL certified accordingly to UL 325 and CAN/CSA-22.2 No. 247-14 and is supplied with UL approved cables UL STYLE 2464 SHE test WMX 504 / 504 UL / 804 UL: not SHE tested WMX 804*: tested in accordance with DIN 18232-3, section 3.6 (30 minutes at $300^{\circ}C$).
- *The construction of the actuator is identical with WMX 802, which has passed the SHE test Life span Tested with 10,000 opening and closing movements Delivery includes Actuator with 1.9m cable with fast in/fast out connector for WLL cable To be ordered separately Brackets and WLL extension cable Note We reserve the right to make technical changes.
- Door automation system – Geze Powerturn IS Electromechanical swing door drive system for double leaf doors with closing sequence control. Smart swing function for easy manual door opening. Closing force of EN4-7 with variable adjustment. Opening and closing speed can be individually adjusted. Mechanical latching action when operated without current, and electrical latching action in regular operation, which accelerates the door shortly before the closed position. Mechanical and electrical closing sequence control holds the active leaf in the waiting position until the passive leaf is closed. Low-energy function opens and closes the door with reduced speed, fulfilling the highest safety demands. Right and left double leaf single-action doors. Single-action doors up to 3200 mm hinge clearance, 1600 mm leaf width and 600 kg weight. Minimum hinge clearance 1600 mm. Interior and exterior doors with high access frequency. Transom installation hinge and opposite hinge side.

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11. Glass

11.1 Materials and Workmanship Generally

All glass shall be of the best quality of approved manufacture, cut true to size, without splintered edges, free from all defects. Glass, which is splintered, scratched or otherwise imperfect will not be accepted and any such shall be renewed at the Contractor's expense, together with all consequential costs.

11.2 Standards

The installation shall be designed and installed to comply in all respects with all relevant national and international standards and codes of practice, in particular the following:

B.S. 952	Glass for glazing. Part 1 Certification. Part 2 Terminology for work on glass.
B.S.5051	Security glazing.
BS EN 12150	Safety glass.
BS EN 1279	Glazing.
B.S.5357	Code of practice for the installation of security glazing.
B.S.5544	Specification for anti-bandit glazing.
B.S.5713	Specification for hermetically sealed flat double-glazing units.
B.S.6180	Code of practice for security barriers in or about buildings.
B.S.6206	Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings.
B.S.6262	Code of practice for glazing in buildings.
C.P. 153	Windows and roof lights. Part 1 Cleaning and safety. Part 2 Durability and maintenance. Part 4 Fire hazards associated with glazing in buildings.

11.3 Thickness

All glass thickness to be calculated to accord with Pilkington's publication, "Glass and Wind Loading" to latest issue.

Glass generally to be 6mm float glass throughout.

Glass size (sq.m)	(Float) Glass Thickness
Up to 0.5	3mm
Up to 1.5	4mm
Above 1.55	6mm
Panels less than 0.6m from F.F.C	6mm toughened

11.4 Fire resistant Glass

Where fire-resistant glazed screens are called for the Contractor shall allow for using Pyran or other equal fire-resistant clear glazing material in an intumescent patent glazing channel such that the completed assemblies will be in compliance with B.S. 476 to latest revision.

11.5 Double Glazed Units

11.5.1 General

Double glazed units shall be supplied by a manufacturer who manufactures to the above-mentioned British Standards and is entitled to employ British Standard Kitemark and/or Agreement Certificate.

11.5.2 Glass Type

Glass used shall be soft coat low emissivity glass toughened type to outer pane with annealed glass employed on inner face only. Glass used shall be tinted.

11.5.3 Air space

All double-glazed units are to be hermetically sealed units incorporating 12.5 mm (if other not specified by window supplier) airspace filled with Argon.



11.5.4 Fixing

Glass to be fitted with warm edge spacer bar, dual sealing gasket and secured with clip-on glazing beads to match the window frames.

11.6 Manifestation

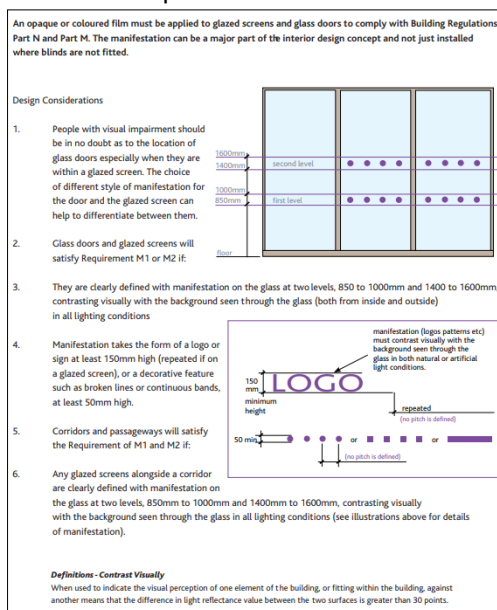
Window Glazing Manifestations are to be provided in accordance with TGD M.

Supplier to prepare Shop Drawings and samples of proposed manifestations providing sample on each glass type.

Manifestations to be provided to all internal & external entrance doors including all glazed panels adjoining doors and independent internal glazed panels. All glazing to be clearly defined with glass manifestation on the glass at two levels; between **850– 1000 mm** and between **1400–1600 mm** above the floor, contrasting visually with the background seen through the glass (both inside and out) in all lighting conditions. Manifestation to take the form of logo or sign at least **150 mm** high (repeated if on a glazed screen), or a decorative feature such as broken lines or continuous bands, at least 50 mm high. Supplier to use 3M crystal edge frosted translucent cast and polymeric films similar equal or approved. Products including glass and manifestations to be designed and installed in compliance with BS 6262-4:2018 Glazing for buildings. Code of practice for safety related to human impact.

Flammability: Surface burning characteristics product to be fully compliant with BS 476 -6 and -7, Class 0 – Surface Spread of Flame and Ignitability. Provide third party test reports indicating compliance with the test values. All products specified in this section will be supplied by a single supplier/manufacturer with a minimum of 5 years track record. Sample, provide a mock-up for evaluation of surface preparation techniques and application workmanship.

Preparation: Clean surfaces thoroughly prior to installation. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions. Refer to Manufacturer's installation instructions for methods of preparation film attachment system. Install in accordance with manufacturer's instructions. Cut film edges neatly and square at a uniform distance of 3 mm to 1.5 mm of window sealant. Use new blade tips after 3 to 4 cuts. Spray the slip solution, composed of one capful of a soapy solution to 1 gallon of water, on window glass and adhesive to facilitate proper positioning of film. Apply film to glass and lightly spray film with slip solution. Squeegee from top to bottom of window. Spray slip solution to film and squeegee a second time. Allow film to dry flat with no moisture dimples when viewed under normal viewing conditions. Repair / replace damaged products before Substantial Completion.



12. Internal Doors & Frames

12.1 General

Flush panel, internal doors to I.S. 48: 1985 decorated as specified, to sizes shown on Door Schedule. All internal door frames and linings are to be secured with 3 no. sherardised steel fixing cramps to each reveal at intervals of 675 mm maximum vertically.

Flush door to generally be solid core ash.

In all cases, door frames shall match door leaves in terms of material. Finish – as indicated on the drawing.

The doors are to be supplied complete with matching frames and ironmongery as 'doorsets'. The supplier shall be responsible for the detail design of such door-sets and to ensure that the required standards are adhered to and met. Where joinery details are furnished, these are intended for external appearance and general arrangement only. Such general arrangement detailing may be altered, which includes overall sizing, vision panel details and door set configuration.

12.2 Vision Panels

Patent glazing channels or glazing frames to be used as required in the construction of vision panels. Size to be sufficient to allow for ease of viewing by disabled persons as per Doc M.

Glass panels for doors generally to be **Pilkington Optiphon™ 12,8mm (according with Pilkington's publication, "Glass and Wind Loading" to latest issue) laminated glass**. To achieve acoustic rating of <<XX>>dB. Allow for frame in hardwood as per the door schedule drawings. All voids to be filled with acoustic paste.

12.3 Internal Fire Doors

12.3.1 General

Fire door-sets are to be of 30-minute, 60-minute or 120-minute fire resistance as noted on the drawings and schedules.

Performance requirement for fire-door sets over-rides particular details where indicated.

12.3.2 Standards/Certificates

The fire door sets to be test proven to BS476 Pt22 or BS EN 1634-1.

A Test Certificate for the fire doors to B.S. 476 Part 22 is to be furnished.

The doors shall comply with B.S. 8214: 1990 Code of Practice for Fire Doors with non-metallic leaves.

12.3.3 Fireproofing

All fire doors are to be fitted with approved smoke and heat seals by Sealmaster N30S Fire & Smoke Seal or equal approved. Intumescent Fire and Smoke Seals have been tested and approved by Certifier to conform to BS476 part 22.

Note the requirement for intumescent plugs at hinges as necessary.

12.3.4 Required markings

The door sets are to be identified with an engraved metal plate stating:

- Period of Resistance
- Manufacturer
- Year of Manufacture

All fire doors shall comply with the provisions of Appendix B of Technical guidance Document 9(TGD) B of the Building Regulations.

Note requirement for identification tag / plate on doors and certification of same. All signage to comply with BS 5499-10:2014.

12.3.5 Door Furniture

The following signs are required to be provided to fire doors.

These will generally be 80 mm. Dia. 2 mm thickness aluminium plates to B.S. 5499 Part 1:1990.

Signs to be as follows:

- Internal fire doors: engraved aluminium sign fixed on each face with the script: 'FIRE DOOR –KEEP CLOSED'.

- Internal automatic fire doors: engraved aluminium sign fixed on each face with the script: 'FIRE DOOR – KEEP CLOSED'
- Internal duct access fire doors: engraved aluminium sign fixed on each face with the script: 'FIRE DOOR – KEEP CLOSED'
- External fire doors: printed plastic sign fixed on the inside face with the script: 'FIRE DOOR – PUSH BAR TO OPEN' and on the outside face: 'FIRE DOOR -KEEP CLOSED'

12.3.6 Vision Panels

Vision panels to fire doors: sets are to be to same standard as door leaves with certification required as before.

Patent glazing channels or glazing frames to be used as required in the construction of vision panels.

Size of vision panels to be sufficient to allow for ease of viewing by disabled persons as per Doc M.

12.3.7 Internal Door Ironmongery

12.3.7.1 General

If an ironmongery schedule is prepared and included elsewhere with the tender pack it shall supersede this paragraph.

12.3.7.2 Closers

One stainless steel overhead door closer, satin finish complete with all fixings. See Ironmongery Schedule. All fire doors are to be fitted with approved automatic self-closer suitable for fire door application.

12.3.7.3 Hinges

One and a half pair of stainless-steel butt hinges per door leaf of satin finish, with square corners complete with all fixings. See Ironmongery Schedule.

12.3.7.4 Finish

The finish shall be satin stainless steel unless otherwise stated. See Ironmongery Schedule.

12.3.7.5 Locks

The alternate leaf in each pair of doors shall be provided with two locks (per leaf); the lock type shall be a narrow stile hook bolt type. Provide two keys per lock. Locks to all doors to be cylinder operated to a master suite, master keys will be required for each master suite.

The doors which comprise a pair of leaves (equal or unequal) shall have one leaf of each pair provided with one pair of aluminium flush bolts, slide type, 200mm long.

Employer to confirm number of suites /master key extent.

12.3.7.6 Handles

One pair of stainless-steel D line 19mm return to door handles per leaf or pull handles (for more details, please, see relevant drawings and specification provided by KCC), satin finish, complete with M8 countersunk back fixing bolt.

12.3.7.7 Plates

One stainless kick plate per face, square corners 750x150mm, satin finish, complete with all countersunk fixings.

12.3.7.8 Signage

Allow for the supply and installation of 2 no. aluminium signs to each face of every new door. Allow for 400x200mm milled aluminium signs. Each sign to be fixed to the door face with 8 number counter sunk anodized aluminium screws with Allen key head. Allow for different text to all signs. Allow for 2 colours to be used in the sign writing on every sign. Allow for the use of 65mm tall Arial text along with graphics. All to B.S. 5499 Part 1:1990.

*Refer to detailed technical submittal in **Appendix A** and the schedule in **Appendix B** which set out the specification scope of ironmongery to be employed on this project. Equal or approved will be subject to agreement with the architect.*

12.4 Internal Windows

Where internal windows to be fire rated: glazing – **Pyrostop® Line 30-604OW 22mm thick laminated glass** or equivalent to meet TGD K, and impact resistance in accordance with EN12600. To achieve acoustic rating of **40db** (acc. to EN 13501-2 classification EI). Allow for frame in hardwood as per the door schedule drawings. All voids to be filled with 10mm fire resistant, acoustic paste. Fixed to walls and floors using approved anchor bolts, nominally M6 @ 450mm centres. Provide fire retardant mastic



at all interfaces with floors and/or walls. Provide intumescent seal between glazing and frame to achieve fire rating called up in the schedule. Patent glazing channels or glazing frames to be used as required in the construction of internal windows.

Where internal windows to be not fire rated and openable:

Glass panels for internal windows to be Pilkington Optiwhite™ 8mm (according with Pilkington's publication, "Glass and Wind Loading" to latest issue) laminated glass. Allow for hidden aluminium frame as per the internal window schedule drawings. All voids to be filled with acoustic paste.

Patent glazing channels or glazing frames to be used as required in the construction of vision panels. Aluminium frame to comply with quality standards of BS EN ISO 9001, accredited to BS EN 1527 with achieving of min 10 years guaranty.



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13. Stud Partitions

13.1 General

Internal partitions shall be a complete system and must be sourced from a recognized supplier. In all cases, the contractor is required to verify the partition construction accords with the requirements of B.S.476 and will be required to furnish a certificate in an appropriate form to confirm same. The whole partition system must be certified by the provider.

Partitions must run full height to provide sound reduction between all rooms as indicated in SDG 02-05-03. Airborne sound insulation must satisfy the following: Laboratory measurement of complete partition assembly - Weighted sound reduction index R_w (minimum) to BS EN ISO 717-1: Not less than 58 R_w dB (site tested). Stud partitions must provide the fire rating requirements as indicated on the drawings.

All internal walls to be designed to provide all necessary supports and must be capable of withstanding severe impact.

Testing

Testing should be carried out at the end of the project on behalf of the main contractor by a Specialist Acoustic Consultant.

13.2 Metal Partitions

In all cases metal framing to partitions shall be by Gypsum Industries or equal approved, supplied and fixed in accordance with the recommendations and specifications prepared by Gypsum Industries, to latest revision. Use all accessories, clips, brackets, sealant, joint filler, control joint strip etc., to meet this requirement. Refer to separate specification for metal stud partitions (not fire-rated) for general requirements and fixing.

For not fire rated stud walls following should be used:

<<INSERT STUD PARTITION WALL TYPES TO MATCH WALL SCHEDULE>>

<<INCLUDE THE FOLLOWING FOR EACH WALL TYPE IN SPECIFICATION>>

Metal Stud Partition System Type: <<INSERT>>

Product Substantiation Report (PSR) reference: <<INSERT>>

Performance characteristics

- Partition Fire Resistance (BS 476): <<INSERT>>
- Partition Laboratory Sound Resistance (BS EN 717): <<INSERT>>
- Partition Duty Rating (BS 5234): <<INSERT>>
-
- Maximum Recommended Partition height: <<XX>>mm
(Based on limiting deflection of L/240@200Pa)
- Partition nominal thickness (excluding finishes): <<XX>>mm

Framing Components

- Gypframe metal stud reference: <<INSERT>>
- Stud centres: <<XX>>mm
- Gypframe channel reference: <<INSERT>>
- Acoustical sealant: Gyproc Sealant applied around perimeter to both sides of partition framework
- Deflection Head requirement: As per structural requirements (defined by others)
- Drawing references: Refer to relevant Architects drawings

Plasterboard Components

- Number of plasterboards layers each side: <<XX>>
- Gyproc plasterboards: Layer 1 (Inner): <<INSERT>>
- Screw fixings for boarding: Layer 1 (Inner): 25mm Gyproc Jack-Point Screws / (Layer 2 41mm Gyproc Jack-Point Screws)
- All board joints installed staggered in accordance with Gyproc's current installation recommendations.
- Vertical Joints in face layer boards treated in accordance with Gyproc Paper Joint Tape method.
- Horizontal joints in face layer boards to be backed by Gypframe GFS1 Fixing Strap and treated in accordance with Gyproc Paper Joint Tape method.
- Gyproc DryWall screws installed at 300mm centres (200mm at external corners)
- Gyproc DryWall screws must maintain a minimum 10mm penetration through metal framing components.

Insulation components

Insulation specification required in stud cavity: <<INSERT>>



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Finishing

2mm Gyproc Skimcoat plaster (or Carlite Finish) applied in accordance with Gyproc's current recommendations. Or 1 coat of Gyproc Drywall Primer prior to direct decoration (applied as soon as possible after board fixing is completed)

13.3 Fire rated partitions

Fire rated partitions metal framed – see Architects Drawings for details. All partition systems and especially fire rated partitions are to be constructed strictly in accordance with the tests under which they are certified. This shall include the type, location and configuration of the fixings and support straps etc. Include for all measures to manage and facilitate building services, including for example all “letter box” details necessary to maintain the integrity of the fire rated divisions.

Fire rated stud partitions, load-bearing and non-load bearing, will be finished on both sides as set out below:

13.3.1 Half-hour resistance

<<INSERT STUD PARTITION WALL TYPES TO MATCH WALL SCHEDULE>>

<<INCLUDE THE FOLLOWING FOR EACH WALL TYPE IN SPECIFICATION>>

13.3.2 One hour resistance

<<INSERT STUD PARTITION WALL TYPES TO MATCH WALL SCHEDULE>>

<<INCLUDE THE FOLLOWING FOR EACH WALL TYPE IN SPECIFICATION>>



14. Fire Protection

14.1 General

Fire protection and fire stopping where required shall be to 30, 60 or 90 minutes of fire resistance measured in accordance with I.S. EN 13501.

60 minutes of fire resistance is required generally, refer to Fire Certificate Drawings/ Architects drawings for extent of fire walls. All aspects of the Fire Safety Certificate Report are to be adhered to.

14.2 Structural Fire Protection

The requirements for protection to elements of structure should be as follows:

14.2.1 Encasement

Encasement to stanchions, columns generally and to any element of support except roof. Framing in all cases will comprise galvanised steel framing sections (M5 and M6A by Gypsum Industries in particular) fixed to manufacturer's specification.

Refer to the detail drawings and installation/fixing guidelines from Gypsum Industries for details, to suit steel section size factor hP/A for chosen steel profiles/sections.

Where structural steel supports, are indicated to be encased to achieve a fire resistance, the encasement construction shall be plaster-based, in accordance with the recommendations of Gypsum Industries pictures, to one of the following specifications:

14.2.1.1 Half-hour resistance

One-layer 15mm Gyproc Fireline board, with one 2mm coat of Gyproc Veneer Finish plaster (total plaster thickness 17mm). Allow for partition sizes shown on drawings.

14.2.1.2 One hour resistance

Two layers 12.5mm Gyproc Fireline board, with one 2mm coat of Gyproc Veneer Finish plaster (total plaster thickness 27mm). For given steel sections, one-layer 15mm Gyproc Fireline board may suffice, and such will be as indicated on the detail drawings. Allow for partition sizes shown on drawings.

14.2.1.3 Two-hour resistance

Gyproc Fireline board to accord with Gypsum Industries requirements for 2-hour resistance in accordance with steel section size factor hP/A or to other arrangement and details indicated on assembly/detail drawings, where provided. Allow for partition sizes shown on drawings.

14.2.2 Lightweight protection

With gypsum base boarding (Fireline or equal approved and grey board as specified elsewhere) and wet plaster finishes to stanchions and horizontal structural steelwork at all floors except roof, once the structural member is not being relied on for supporting walls. Refer to section 4.0.

14.2.3 Intumescent paint-based systems.

Refer to section 14.0. for alternative intumescent paint-based systems where these are allowed.

14.3 Fire Stopping

14.3.1 General

All penetrations through stud or solid walls, ceilings or floors are to be provided with fire stopping collars in accordance with the examples set out below or equal approved. This shall apply to all cables, ducts, pipework or any other penetration. Fire stopping required will be carried out with both Rockwool insulation quilt or equal approved (Rockwool Fire Barrier or equal approved - mesh reinforced) and intumescent paste, collars, sleeves etc. In all cases the materials and their application are to test approved to accord with I.S. EN 13501.

Fire stops with intumescent paste all joints/junctions of less than 10mm girth. Use materials by KBS or Lorient or equal approved. Fire resistance 30/60/90 minutes as specified.

Fire stopping required above lightweight partitions and the like - 30- and 60-minutes resistance. Use Rockwool Fire Barrier or equal approved.

Fire stopping around pipework, trunking and the like to be carried out using patent cavity barrier such as Albi-seal or Corofil or equal approved.

14.3.2 Fire Collars & Intumescent Wraps

All Pyropanel fire collars are tested to comply with AS1530.4-1997 and AS4072.1-1992. Pyropanel fire collars prevent the passage of flames and hot gases by crushing and sealing off the plastic pipe. The intumescent material contained in all the collars and wraps is unaffected by water or atmospheric



influences and industrial environments. It is also resistant to dilute acids, alkalis, paints and conventional construction materials, including binding agents such as gypsum, lime, cement and adhesives.

Pyrosleeve "Cast-In" Fire Collars

- For use in cast-in applications.
- Integral moisture, grout and smoke seal.
- 250mm height of collar covers wide range of floor thickness.
- 2 collar sizes service pipe sizes 32 - 100mm (nom)
- Base of collar has ability to accommodate pipe fittings
- 2-hour performance in concrete floors



Pyrosleeve "TITAN" Fire Collar

- For use in cast-in applications
- Robust metal canister - can take the knocks on site
- Nominal diameter pipes from 40 to 150mm
- Up to four-hour performance with all types of plastic pipes



Pyrosleeve "RF" Fire Collar (Retrofit)

- Surface mounted collar for existing pipe work
- Robust metal canister
- Narrow collar provides increased clearance
- Two sizes cover nominal pipe diameters 32 to 100mm
- Two hours plus performance



Pyrosleeve "GV" Fire Collar

- For use in masonry and drywall applications
- Two hours plus performance in many specialist applications



Pyrorap - The Intumescent Wrap for Plastic Pipe Systems

- For use in concrete floors and walls
- Nominal diameter pipes from 20 to 100mm
- Up to four-hour performance in floors with all types of plastic pipes
- Two hours plus performance in walls



Pyrosleeve "RS 20" Fire Collar

- For use in concrete floors and walls
- Nominal diameter pipes from 225 to 300mm
- Up to 4 hr performance for plastic pipes
- Able to be retrofitted
- Simple installation



14.3.3 Certificate

A certificate to confirm compliance with specified standards will be required to be produced upon completion of the fire-stopping works. This certificate shall be in a form to be approved by the Architect.

14.3.4 Information

The Contractor shall include for providing all necessary information as requested by the Project Supervisor for the Construction Stage to enable the preparation and completion of the Safety File excluding drawings and specifications which shall be provided by the appropriate members of the

design team and relevant nominated duties of the Project Supervisor for the Construction Stage of the Project.

The Contractor shall include for providing assistance to the appropriate members of the design team (and to relevant nominated sub-contractors) in preparing "Construction" drawings for inclusion in the Safety File. The safety file shall be handed over to the employer within 2 working weeks of completion, or a time agreeable to the employer.

Additional Clauses may be required for individual projects to take account of particular risks.



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15. Flooring

15.1 General

Supply and fit flooring as indicated on the Finishes Schedule.

Refer to room finishes schedule for the thicknesses to be used in each case.

15.1.1 Acoustic Underlay

15.1.2 Non-Slip vinyl floor finish.

15.1.3 Carpet.

15.1.4 Stair surface finish

15.1.5 Side Trim

15.1.6 Entrance matt

15.1.7 Moisture suppressing

15.1.8 Coved Skirting

15.1.9 Floor Trims

15.1.10 Adhesion

Good adhesion is the basis for a perfectly installed floor. Use approved adhesives for bonding sheet flooring to the subfloor or equal approved.

Lay the sheet into the wet adhesive bed and press it firmly into place, the sheet end in particular. Roll the surface, first width wise, then lengthwise. Remove any excess adhesive. The seams shall be made to fit.

After installation, make sure that the room is well ventilated. A freshly installed floor should not be used until the adhesive has thoroughly set. (Under normal conditions this takes two days).

16. Suspended Ceiling

16.1 General

The ceiling system shall be as set out in the general arrangement drawings and must safely support loads including M&E services.

16.2 Tiled Suspended Ceiling

The suspension system shall be as recommended by the tile manufacturer to complete the ceiling system and achieve specified performance. It shall include all edge trims, tiles supports, suspension cables, brackets and hangers necessary to support the system in accordance with the European standard, DIN EN 13964 - Suspended ceilings.

16.3 Ecophon Ceiling System

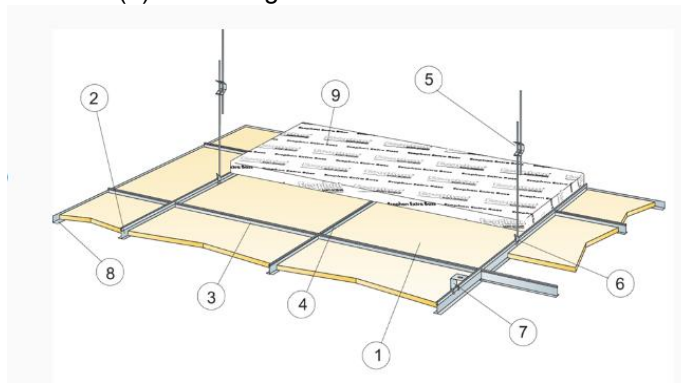
Ecophon ceiling systems to be CE marked according to the European harmonized standard EN13964:2014. Supply and install fully integrated ceiling system, comprising:

Ecophon Focus A, or equal approved.

In the areas illustrated on the drawings, supply and install a system Ecophon Focus A or equal approved. An exposed grid system with easily demountable tiles. Ceiling finish comprising a glass wool core with tiles tested and classified as non-combustible according to EN ISO 1182. Europe test to EN 13501-1 standard, class, A2-s1,d0. Humidity Resistance to be Class C, relative humidity 95% and 30°C, according to EN 13964:2014. Visual appearance to be White Frost, nearest NCS colour sample S 0500-N, 85% light reflectance. Gloss < 1. Cleanability to allow for daily dusting and vacuum cleaning. Weekly wet wiping. Installed according to installation diagrams, installation guides and drawing aid provided by the supplier.

The weight of the system (including suspension grid) should be approximately 3 kg/m². Include for metal support system in either light gauge steel or aluminium; equal or approved when compared to the following: Acoustic classification according to EN ISO 11654 to achieve Class A sound absorption. Installation method – M399 - Suspended ceiling. Mechanical properties of the system – 50 N (max live load), 160 N (Min load bearing capacity).

Combining tile sizes: 600x600x20(h) mm with grid size – T24.



Include for metal support system in either light gauge steel or aluminium; equal or approved when compared to the following:

1. Focus A - 2,8/m²; **2.** Connect T24 Main runner black, installed at 1200 mm centres (max. distance from wall 600 mm, can be extended up to 1200 mm if no live load between Main runner and wall) - 0,9m/m²; **3.** Connect T24 Cross tee black, L=1200 mm, installed at 600 mm centres 1,7m/m²; **4.** Connect T24 Cross tee black, L=600 mm - 0,9m/m²; **5.** Connect Adjustable Hanger, installed at 1200 mm centres (max. distance from wall 600 mm) 0,7/m²; **6.** Connect Hanger Clip - 0,7/m²; **7.** - ; **8.** Connect Angle trim black, (fixed at 300 mm centres); **9.** Extra Bass (1200x600x50 mm) 0,7/m²; Δ Min. overall depth of system: Focus A/with Extra bass: 100 mm. δ Min. demounting depth: Focus A/with Extra bass: 170 mm.

16.4 16.4 Acoustic wall panels

Acoustic wall panels to be provided as set out on the drawings, and to be manufactured from high-density glass wool. The visible surface to have a glass fibre fabric (Texona) or an impact-resistant glass fibre fabric (Super G), and available with a painted surface (Akutex™ FT). The back of the panel to be covered with glass tissue. Profiles to be galvanized steel (Connect Channel trim) or aluminium (Connect WP Profile and Connect Thinline). Panels: high-density glass wool with natural square edge, or rebated and chamfered edges, Akusto Wall System A: 2700 x 1200 mm (l x w), 40 mm thickness; Akusto Wall System C: 2700 x 600 mm (l x w), 40 mm thickness. Min recycled content 57%.

16.5 16.5 MF Ceiling System

This is to comprise a certified and tested system complete with all fixings, frames, trims and ancillary items to create a monolithic plaster slab ceiling. Notionally to comprise (or equal approved) GypCeiling MF suspended ceiling framework of Gypframe MF7 at 600mm centres and Gypframe MF5 at 400mm centres fixed to structure and lined with a single layer of moisture resistant 12.5mm Hydro board or Acoustic board (refer to drawings) with 150mm stone mineral wool roll (22kg/m³) laid over Gypframe MF5 Ceiling sections.

Standard to be equal to the following.

The screw should be Phosphate coated steel, the thickness of the board plus a minimum 10mm penetration into Gypframe metal. Please refer to the White Book online for more information about ins EN 14566:2008+A1:2009.

Steel angle/frame: Cold-roll steel formed using the patented UltraSTEEL® process to meet EN 14195:2005.

Plasterboard to be Type H1, Boards which have additives to reduce the water absorption rate. They may be suitable for special applications in which reduced water absorption properties are required to improve the performance of the board. For the purposes of identification, these boards are designated Type H1, H2 and H3, with different water absorption performance. EN 520:2004+A1:2009, Gypsum plasterboards.

For **Acoustic Boards** Gyproc Sound Block to be used or equal approved to have BES 6001 certification, reaction to fire performance - BS 476: Part 7: 1997 Surface spread of flame tests for materials - Class 1 (both sides), EN 520: 2004, A1:2009 - Classified without further testing as A2-s1, d0. Thermal conductivity λ Gyproc SoundBloc - 0.25W/mK. Product standards - EN520: 2004, A1:2009 Gypsum Plasterboards, definitions, requirements and test methods.

17. Decorator**17.1 General specification for finishes**

Refer to Finishes schedule drawings:

17.2 Paint

Paint colours have not been selected.

For tendering purposes allow for:

10 different colours of ceiling paints.

10 different colours of metalwork and woodwork

and 20 colours of wall paints.

These are to be divided equally by the overall quantity in each case.

All paints to be anti-microbial unless otherwise stated.

17.3 Standards

Materials shall comply with the following standards:

Hard Gloss Enamel Paints	:I.S. 32 :1963 (Amended 1965)
Oil-based Paints	:I.S. 115 :1963
Emulsion Paints	:I.S. 129 :1964
Knotting	:I.S. 16 :1958
White Spirits	:I.S. 11 and B.S. 245 :1958
Linseed Oil	:I.S. 14, 93, 94 :1958
Oil-based Priming Paint	:I.S. 18 :1963

17.4 Prime

Prime all surfaces of softwood, hardwood, ferrous metals, galvanised surfaces with an approved priming coat. Priming paints shall be lead free to B.S. 3443. Use only aluminium-based primer on wood surfaces.

17.5 Woodwork

Twice knot, prime, stop and paint three additional coats in oil paint coloured to an approved finish, on all woodwork noted to be painted including fittings and fixtures both internally and externally. Where called for, treat hardwood with an approved stain, oil, varnish, or other treatment as specified. Architects will select finish and shade. See Schedule of Finishes.

17.6 Plastered Surfaces

All plastered surfaces to be decorated shall be prepared and treated with approved anti-suction primer, in accordance with the manufacturer's instructions. The surfaces to be painted shall be rubbed down, filled, and otherwise prepared before every coat and the Contractor shall give notice of each coat before applying it.

17.7 Steel Work

Refer to detail drawings or structural engineer's specification where available for details of steelwork preparation and priming, which work will be carried out by the structural steelwork contractor.

Finishing painting will be carried out overshot blasted and primed steelwork, delivered to site, erected, and touched up, all by the steelwork contractor.

Finish paintwork will comprise cleaning of surfaces to be decorated to ensure that they are clean and free from all dirt, dust, grease, and all possible contaminants. Surfaces to be coated are to be sound and free from all rust areas. If any rust spots are apparent, spot prime these areas with one coat of fast drying primer from General Paints Ltd. or equal approved. All areas to be painted should be washed down with fast drying thinners, prior to painting.

17.8 Protection

Where decorations are to be carried out on external parts of a property, allow for fully protecting, against splashing or spillage, all adjoining properties and passing pedestrians and vehicular traffic by means of ample and well secured screens, tarpaulins etc.

17.9 Making Good

Make good interior decorations as necessary following any alterations or repairs.

17.10 Leave Clean

The whole of the work shall be cleaned out, surplus materials removed, glass cleaned, and floors scrubbed on completion.

END OF SPECIFICATION



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