M3NHF Schedule of Rates

VERSION 8

Responsive Maintenance and Void Property Works Specification

Your challenges expertly solved in partnership

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SPECIFICATION OF WORKMANSHIP AND MATERIALS

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GENERAL

GENERAL

Applicability

001 This initial general section applies to all subsequent sections of this Specification of Workmanship and Materials **("this Specification")**.

002 This Specification is drafted as a series of instructions that the Provider must ensure are complied with in relation to the Works. Each instruction includes all tasks necessary to comply fully with the instruction and the Schedule of Rates item(s) to which it relates.

003 The Schedule of Rates amounts, as adjusted by the Provider's tendered Rates where applicable, and the tendered Prices include for carrying out all tasks required by this Specification. No further payment is due to the Provider in respect of any such tasks beyond the payments provided for in the Schedule of Rates, the Price Framework and the Price Schedule.

004 Specifications across several trades may be relevant to each Schedule of Rates item. The Provider must comply with all requirements of this Specification applicable to the specific type of Works to be undertaken.

005 References to Paragraphs and Sections in this Specification are to the applicable Paragraph and Section of this Specification. If any contradiction appears within the Specification sections, Schedules of Rates, the Client's Policy documents etc., the most rigorous standard takes precedence.

Standards of workmanship and Materials

006 Carry out and complete all Works as required by this Contract including:
- in accordance with Law including Health and Safety Law and Building Safety Law;
- in accordance with all applicable Codes of Practice;
- in accordance with Good Industry Practice;
- in accordance with the Client's Policies;
- in accordance with any specific requirements for those Works in this Specification; and
- to the satisfaction of the Client's Representative.

007 To the extent that the standard of any Works has not been specified in this Contract, agree the relevant standard for the Works with the Client's Representative before their execution. Where particular Works or working methods are to be "approved by" "agreed with" or are indicated to be "subject to the approval of" the Client's Representative, give the Client's Representative adequate notice when such approval or agreement is needed and retain evidence of all approvals given, and items that have been agreed, by the Client's Representative.

008 To the extent that it is necessary to Design any aspects of the Works, in preparing those use the reasonable skill, care, diligence and expedition as would be reasonably expected of a prudent experienced contractor with Design obligations having experience in carrying out projects similar in size, scope, nature, complexity and value to the Works.

009 Maintain all existing lines and levels at all times and carry through new Work to the same lines and levels unless otherwise Instructed by the Client's Representative.

European and British Standards & Codes of Practice

010 Ensure all Works undertaken and all Materials used in those Works comply with all applicable Standards and Codes of Practice that are current at the time of their use.

011 References in this Specification of Workmanship and Materials to any Standards and Codes of Practice are to be construed as references to the version current at the time the Order is undertaken.

012 Where a specific Standard or a Code of Practice is referred to, this sets out the minimum acceptable standard of Materials or workmanship.

013 Any requirement in this Specification of Workmanship and Materials to use Materials defined by reference to a specified Quality Assurance Scheme, British Board of Agrément Certificate, Standard or other approval, may be satisfied by compliance with an equivalent international Standard.

014 A Provider offering any Materials on the basis of compliance with any such approval or international Standard shall notify the Client's Representative of such substitution in advance of placing any order for those Materials and provide (in English) technical or other details of the approval or Standard and its qualifying tests.

Materials

015 The Client wishes to standardise the use of Materials across its Properties. This is in order to simplify parts requirements and van stock loads, to improve its repairs processes and to reduce maintenance costs. Wherever possible, match all Materials used to materials currently used in the Properties, particularly in terms of their parts requirements and repair procedures. In this Specification the Client has set out details of its current Materials to which the Provider is required to standardise.

016 Where this Specification indicates that Materials are to be "Approved by the Client's Representative", provide samples of the proposed Materials to the Client's Representative for Approval. Any Materials that comply with the functionality and compatibility (including aesthetic compatibility) requirements of this Specification may be proposed. No further approval is required for any Materials listed in this Specification as being the Client's currently used Materials. The purpose of the Client's Representative's decision on the use and approval of such Materials is to ensure that they meet the Client's requirements for functionality and compatibility. The decision of the Client's Representative on this is final.

017 Where this Specification requires Materials to be matched to existing Materials or finishes, this match is subject to the Approval of the Client.

018 Do not use any Prohibited Materials in carrying out the Works. Prohibited Materials are those materials which are generally accepted or (having regard to Good Industry Practice) are reasonably suspected of:

- being harmful in themselves;
- being harmful when used in a particular situation or in combination with other Materials;
- becoming harmful with the passage of time; or
- being damaged by or causing damage to the structure in which they are to be affixed.

019 Materials are to be regarded as harmful if, in the context of their use in the Works (whether alone or in combination with other materials) they:

- are prejudicial to health and safety;
- may pose a threat to the structural stability or the physical integrity of any Property; or
- could materially reduce the normal life expectancy of any part of the Property.

020 Sustainable Timber: All timber and wood derived products referred to throughout this document and which are supplied to the Client, or used in the Works, must be procured in accordance with all applicable Law.

021 CE/UKCA Marked Products: All products referred to throughout this document and supplied to the Client, or used in the Works, must be supplied with a Declaration of Performance (DoP) and carry the appropriate CE/UKCA conformity assessment marking.

Performance Standards on the CE/UKCA mark must comply with relevant Building Regulations where required.

The CE/UKCA mark must be fixed visibly, legibly and indelibly either to the product or to a label attached to the product. If this is not possible or not warranted, then it must be fixed to the packaging or within the accompanying documentation.

The DoP must be made available by the manufacturer (this may be via a website).

022 Use, fix and apply all Materials strictly in accordance with the manufacturer's recommendations, directions, instructions or technical data sheets.

023 Participate in joint initiatives with the Client and other contractors to establish supply chain agreements.

024 Where appropriate suggest (economically viable) amendments to this Specification where those amendments may lead to an improvement in environmental performance or sustainability.

025 At the Client's request provide all information the Client reasonably requests regarding the environmental impact of the supply and use of any Materials the Provider selects for use in the Works.

026 **[optional clause]** If the Provider considers that decanting elderly, vulnerable, people with disabilities and other occupiers and carers from a Property whilst intrusive Works are undertaken or whilst the Works disrupt washing and/or sanitary facilities, provide (at no extra cost) the following facilities:

Decant Mobile - Daytime Decant

Temporary Accommodation conforming to all applicable Standards.

Daytime facilities (where agreed before the start of the Works in the form of either a touring caravan used outside homes between 9am and 5pm and then removed, or a mobile unit located in a fixed position supplied with at least the following:

- External door;
- Bedroom;
- A toilet compartment with WC suite, wash-handbasin and shower unit;
- A flued gas fire/electric heater (note: gas is the preferred option);
- A flued gas fire multi-point water heater or electric water heater;
- Electrical installation complying with the IET Wiring Regulations;
- Mattresses with fireproof removable covers (which shall be thoroughly cleaned and changed after each decant);
- A cooking appliance and fridge;
- Warning notice for health and safety advice to users;
- Fire blanket (to be located by the cooking appliance);
- 1kg-powder fire extinguisher (to be located by the main door);
- Smoke Detector;
- Carbon Monoxide Detector; and
- User's handbook (to be used by Provider when demonstrating the mobile to new occupants).

Also supply the following:

- A security cabinet for 2 (two) 13kg (thirteen kilogramme) bottles of propane gas if gas is to be used (red gas bottle);
- Entrance steps, handrails, level access ramp (maximum 1:12) to be provided for people with a disability to the satisfaction of the Client's Representative;
- Water supply; and
- Mains sewerage connection (where feasible).

Daytime decanting must be as agreed with the Customer and the Client including as to the hours required for the daytime facility, its location and siting. The siting of decant facilities must not inconvenience car parking and/or access to adjoining dwellings.

Laundry and storage facilities, telephone connections [or] television aerials [or a dedicated car parking facility] are not required in a daytime facility*[Client to edit].*

A chemical toilet compliant with all Standards for portable chemical closets may be used where no sewer connection is feasible.

Ensure that all Temporary Accommodation, including its location, installation and checking, complies with Health and Safety Law.

Comply with any Code of Practice for the transportation, siting and commissioning of caravans published by the National Caravan Council.

Agree the location of the day-time mobile decant facility with the Client's Representative.

Service checks are to be carried out by suitably qualified personnel after each decant. These checks should cover:

- Electrical;
- Gas;
- Water;
- Fire prevention equipment;
- Warning Notices; and
- Steps and Handrails.

The facility is to be cleaned between each change of user.

The following notice not less than 200mm x 130mm with the heading printed in red is to be fixed in a prominent position in the Temporary Mobile Accommodation.

ADVICE TO OCCUPIERS

Ventilation
Do not obstruct the ventilators, which are fitted; your safety depends on them.

In Case of Fire
Get everyone out.
Turn off the outside gas valve
Raise the alarm and call the Fire Brigade
Do not stay behind to put the fire out yourself
Do not put yourself at risk

Fire Precautions
Children - must not be left alone in the caravan.
When cooking never leave a cooker unattended
Do not use multi-adaptors.
If you smoke use metal or glass ashtrays-not plastic.
Make sure cigarettes are put out properly
Do not smoke in bed.

Means of Escape
Make sure you know the location and operation of the emergency windows and doors,
Keep door and window keys handy.
Keep all escape routes clear.
If there is smoke, keep low where the air is clearer
Do not go back into the caravan.

Combustible Materials
Keep them clear of all heating and cooking appliances.

Fire Fighting Equipment
In addition to the 1kg powder fire extinguisher by the main exit door, a fire blanket is provided next to the cooker. Make yourself familiar with the instructions on your fire extinguisher and fire blanket and the fire precautions arrangements on site. Do not stay behind to put the fire out yourself. Do not put yourself at risk.

The use of chip pans in mobiles is strictly prohibited.

Permit to Work Certification

027 Comply with any "permit to work system" notified to the Provider by the Client's Representative and ensure that no Worker undertakes any Works covered by any "permit to work System" without a permit having been issued by the Client's Representative.

Access

028 Ensure that a risk assessment is undertaken and a method statement is provided to the Client's Representative detailing the means of access to undertake all Works requiring access at heights including for inspection and testing.

Firestopping

029 Ensure that all holes for cables, pipes etc., in the structure of any Property formed or drilled by the Provider are fire-stopped in accordance with Building Safety Law.

030 Report immediately to the Client's Representative where existing holes for cables, pipes or service media in the structure of any Property have no or inadequate firestopping, giving the detailed location of the hole and providing digital photographs.

ROOFING

ROOFING

GENERAL

Generally

001 Stock adequate compatible Materials for the numerous types of tiled roofs that exist throughout the Properties.

002 Ensure tiles, slates and accessories laid or fitted are of a colour to match the existing.

003 Provide samples of the Materials as and when requested by the Client's Representative. The quality of Material be not less than that of the samples of the agreed standard. Materials shall be stored in a manner which will prevent damage and the introduction of deleterious matter.

004 Carry out tests on Materials as and when requested by the Client's Representative and supply certificates from a testing laboratory showing the results of each test.

005 Reinstate or replace any missing or defective battens and roofing felt when undertaking repairs.

MATERIALS

Dry and Wet ridge/hips/valleys/verges

007 Ensure mechanically fixed dry ridge and dry verge Works are compatible with the existing dry ridge and dry verge installation and existing roof coverings.

008 Ridges are to be designed and fitted in accordance with the applicable Standard and the manufacturer's technical data sheet and to be formed with either 240mm diameter x 457mm long concrete half-round ridge capping tiles or 237mm x 154mm x 457mm long concrete angled mono ridge capping tiles to the applicable Standards complete with plastic profile filler units to match tile profile, and plastic ridge end caps.

009 Hips are to be designed and fitted in accordance with the applicable Standard and the manufacturer's technical data sheet and to be formed with 240mm diameter x 457mm long half round ridge capping tiles to the applicable Standards.

010 Valleys are to be designed and fitted in accordance with the applicable Standard and the manufacturer's technical data sheet from neatly and accurately cut tiles to give a valley width of 125mm.

011 Dry cloaked verge systems are to be designed and fitted in accordance with the applicable Standard and the manufacturer's technical data sheet. Verge to be formed with one and a half tiles in alternate courses, with overhang kept to a minimum. Under-cloak is to be mineral fibre sheet 150mm x 12mm thick laid between the underlay and tiling batten.

012 Ensure wet ridge and wet verge Works are compatible with the existing wet ridge and wet verge installation and existing roof coverings.

Underlay

013 Lap roof tile underlay a minimum 150mm or length as stated in the manufacturer's technical data sheet at horizontal and vertical joints over adequately supporting members. Underlay should be sealed at penetrations through the roof and at the ridge to accommodate high level void ventilation.

014 As specified by roof designer, underlay to be either:

- Reinforced felt, in repairs only, to the applicable Standards; or
- 3 layer composite polypropylene membrane, composed of an impermeable polypropylene film sandwiched between 2 layers of spun-bonded polypropylene with:
  - Tensile strength: min 240N/50m (Longitudinal), 200N/50m (Transverse)
  - Tear Resistance: min 120N (longitudinal), 120N (Transverse)
  - Water Tightness: W1 to the applicable Standard

- Certification: British Agreément Board (BBA) or equivalent; or

- Breather membrane: 3 layer composite membrane, composed of a water vapour permeable membrane, sandwiched between 2 layers of spun-bonded polypropylene. Product to have British Agrément Board certification (BBA) or equivalent.
  - Vapour resistance no more than 0.6MN s/g.
  - Tensile Strength: min. 240 N/50 mm (longitudinal), 200 N/50 mm (transverse).
  - Tear Resistance: min. 120 N (longitudinal), 120 N (transverse).
  - Water Tightness: W1 to the applicable Standard

015 Follow the applicable Standard Code of Practice for slating and tiling for guidance on the appropriate detailing of roofing components and installing underlay.

016 On timber structures use only inodorous sheathing felt or proprietary underlay as specified by the manufacturer as underlay for copper, lead and zinc roofing in a accordance with the applicable Standard.

Battens

017 For the tile battens use good quality deal, reasonably free from knots, clean and with no waney edges and in accordance with applicable Standard impregnated with an appropriate wood preservative before delivery to the Property, as specified under the 'Carpentry and Joinery' Section. Tile battens and counter battens to comply with applicable Standard.

018 Fix battens with staggered joints and square butt jointing. These are to span at least 3 supports.

Wood rolls

019 For wood rolls for copper, zinc or aluminium roofing use wrot seasoned timber to a tapered profile shown in Code of Practice 143:5, 143:12 and 143:15. Use common rolls approximately 45 x 40mm overall unless otherwise Instructed by the Client's Representative.

020 For wood rolls for lead roofing, use wrot seasoned timber to the smooth rounded profile shown in the applicable Standard. Use common rolls approximately 45 x 45mm with a 25mm wide flat base unless otherwise Instructed by the Client's Representative.

Mortar

021 Use cement mortar (1:3) for bedding and pointing as described in the "Brickwork and Blockwork" Section, but slightly tinted in colour and specially mixed for the purpose.

Nails

022 Use galvanised steel clout nails for underlay and battens in compliance with the applicable Standard. Use the right size nails for battens to give a secure fixing without splitting the batten. For slates and tiles use aluminium alloy, copper, or silicon bronze nails to the applicable Standard or other nails approved by the Client's Representative.

023 Use copper jagged or ring shank nails, at least 20mm long with large flat heads for lead roofing.

Clips

024 Where roofing slates or tiles are described as fixing with clips, use lead or copper clips, approx. 300mm long x 20mm wide. Fix them to the roof batten beneath the slate or tile and bend them up and over the bottom edge of the slate or tile. Use aluminium alloy or stainless steel clips to the applicable Standard for slates.

Steel hook bolts and nuts and roofing screws

025 Steel hook bolts for fixing corrugated sheets are to be cadmium or zinc coated steel bolts with plastic sleeves and washers to a standard and quality approved by the Client's Representative. Ensure the bolt profile and size suits the sheets and roof members.

026 For corrugated sheets use galvanised drive roofing screws complete with plastic sleeves and washers to a

standard and quality approved by the Client's Representative. Seams to be fixed with self-tapping screws or bolts.

Plywood decking for flat roofs

027 Ensure plywood sheets are be for structural use to the applicable Standard or equivalent material with Class 3 Bonding (external conditions) to the applicable Standard, durability Class H and to comply to a standard and quality approved by the Client's Representative. Sheets to be fixed at 150mm centres to supports with 50mm x 3mm annular ring shank nails.

Woodwool slab decking for flat roofs

028 Where appropriate, reinforce woodwool slabs to comply with the applicable Standard with pressed steel channels. Use galvanised steel large flat headed nails as fixings for the slabs of a length to suit the application of galvanised steel clips to the applicable Standard or such other fixings as the manufacturer of the slabs recommends. Slabs to be cut accurately and fixed with joints tightly butted and centred on supports, ends and cut edges are to be fully supported or reinforced in accordance with the slab manufacturer's technical data sheet.

Wood chipboard decking for flat roofs

029 Ensure chipboard conforms to the applicable Standard and is of an appropriate moisture resistant grade suitable for the purpose and fix it with galvanised nails to comply to the applicable Standard or screws to a standard and quality and of an appropriate size and gauge approved by the Client's Representative.

Lead

030 Use best milled Code 4 lead for lead roof coverings in accordance with the applicable Standard, flashings, soakers, rainwater chutes, valley gutter linings, hips, ridges and the like, colour marked for thickness and weight Provide tacks minimum 40mm wide of the same lead substance at not more than 1 metre centres to flashings.

031 Clips for leadwork are to be 50mm wide and of a length to suit Client's details and to be formed from either:
- Lead cut from sheets of the same code as the sheet being secured; or
- Copper cut from 0.7mm thick sheet to applicable Standard, temper grade ¼ H, dipped in solder, if exposed to view; or
- Stainless steel, cut from 28 gauge sheet to the applicable Standards, terne coated if exposed to view

Self adhesive flashings

032 Use self adhesive flashings in strict accordance with manufacturer's recommendations and only with the approval of the Client's Representative.

033 Fix self adhesive flashings over existing flashing and fillets. Apply an appropriate primer before use to ensure complete adhesion and in strict accordance with manufacturer's recommendations.

Asphalt roofing

034 Use as rubbing sand clean natural coarse sand passing a 600mm micron test sieve.

035 For chippings use hard light coloured non-absorbent natural stone graded 6 to 10mm.

036 Use white solar reflective paint.

037 Ensure asphalt roofing subject to traffic is to the applicable Standard Type R988 undercoat with finishing coat to a standard and quality approved by the Client's Representative.

038 Use glass fibre tissue for the isolating membrane for roofing subject to traffic.

High performance felt roofing

039 Apply high performance felt roofing from an approved manufacturer to suit the relevant sub-surface and

applied in strict accordance with the manufacturer's technical data sheet.

High performance "torch on" felt roofing

040 Prepare and apply high performance "torch on" felt roofing from an approved manufacturer to suit the relevant sub- surface and applied in strict accordance with the manufacturer's technical data sheet.

041 One layer torch on mineral felt roofing is to be to the applicable Standard Class S3PS

042 Two layer torch on felt roofing is to consist of an intermediate layer of torch on felt roofing to applicable Standard Class S2PS, and a top layer of torch on felt roofing to the applicable Standard Class S2PS.

043 Two layer torch on felt roofing with ventilating layer is to consist of a ventilating layer equivalent to Type 3G glass-fibre reinforced bitumen, perforated venting layer and a top layer of torch on felt roofing all to the applicable Standard Class S2P3.

Bitumen primer

044 For felt roofing, use cut back bitumen primer with a maximum volatile solvent 60% by weight and Redwood No. 2 viscosity at 21^0 Centigrade 25 sec maximum.

Bitumen compounds

045 For felt roofing, use a bitumen bonding compound having a penetration of 20/30 at 25^0C and a softening point (R & B) of $80/100^0$ Centigrade. For the dressing compound use cut back bitumen to the applicable Standard. Use cold compounds dressing for bonding solar reflective chipping only with the approval of the Client's Representative. Ensure the bitumen coating for lead, copper or zinc roofing is a black coating solution to the applicable Standard.

WORKMANSHIP

Roof tiling

046 Lay roof tiling in accordance with the applicable Standards and in even courses to suit the existing gauging and laps. Secure tiles with the appropriate patent clips and/or nails.

047 Underlay to be laid and fixed with extra-large head nails parallel to eaves, cut neatly and accurately around pipes etc.,

048 Battens to be in straight horizontal lines with no batten less than 1200mm long, butt joints are to be centred on supports and must not occur more than once in any group of four batten at any one support, provide additional battens where necessary to prevent underlay being opened at laps by wind suction, fix each batten to each support with round galvanised steel nails 65mm long x 3.35mm.

049 Plain tiling is to be laid with each course to a half lap bond with tails aligned and joints slightly open, cut tiles the minimum necessary and then only with a masonry saw to give clean straight edges, nail tiles (minimum) every fifth course using two aluminium alloy nails per tile.

050 Nail fixed interlocking tiling is to be laid with tails aligned, cut tiles the minimum necessary and then only with a masonry saw to give clean straight edge.

051 Clip fixed interlocking tiling is to be fixed in accordance with the manufacturer's technical data sheet, tiling is tiling is to be laid with tails aligned, cut tiles the minimum necessary and then only with a masonry saw to give clean straight edges.

052 Form mechanically fixed dry ridge with underlay overlapping by not less than 150mm, fit correctly sized ridge batten along the apex of the trusses or rafters and secure to each rafter using stainless steel straps as supplied by the tile manufacturer and fitted in accordance with their technical data sheet, Fit top tiling batten on either side of ridge, fit top row of tiles to either side of ridge and fix to batten with two aluminium alloy nails per tile. Fit the plastic profile filler units in accordance with the manufacturer's technical data sheet, form ridge with ridge capping tiles and secure to ridge batten through the preformed hole in the ridge to ridge seal using the provided screw and washer. Fit the plastic ridge end caps.

053 Ridges spanning a party wall are to have a fire-stop formed by filling the ridge void with a suitable non-combustible material.

054 Form mechanically fixed dry hip with underlay overlapping by not less than 150mm, form ridge with ridge capping tiles. And neatly and accurately cut mitre tiles at junction with ridge.

055 Ventilating roof tiles are to proprietary ventilated in-roof ventilator tiles to match interlocking tiles in pattern, colour and texture and to be approved by the Client's Representative, to provide ventilation to the applicable Standard, product to have BBA certification or equivalent. Tile to provide 20,000mm^2 free opening and to exclude driven rain and large insects, openings are not to be more than 4mm. Tile to be installed approximately 300mm above the level of the insulation. Tile to have an integral apron and spigot for connection to flexible ducting and fixed in accordance with the manufacturer's technical data sheet.

056 Ridge ventilators are to be a proprietary concrete ridge ventilator tile to provide ventilation to the applicable Standard, product to have BBA certification or equivalent. Profile and colour to match adjacent ridge tiles, and mechanically fixed and bedded in accordance with the manufacturer's technical data sheet.

057 Form eaves with a double course of tiles.

058 Form verges with tile and a half in alternate courses including any undercloak and pointed in cement mortar to match the existing mortar. Ensure there are no exposed cut edges of tiles.

Roof slating

059 Close joint natural slate roofing with horizontal and alternate vertical joints ranging through perfectly straight.

060 Head nail slates with two nails to each slate in every course. Secure slates to eaves, verges, ridges, hips, valleys and abutments with two nails to each slate. Ensure there are no exposed cut edges of slates.

061 Form eaves with double course of slates.

062 Form verges with slates and slate and a half slates in alternate courses including any undercloak and bedded, jointed and pointed with mortar, tinted to match the colour of the slates. Ensure there are no exposed cut edges of slates.

063 Ensure ridges and hips are of the type stated in the Schedule of Rates. Bed, joint and point ridge and hip tiles with mortar tinted to match the colour of the tiles or slates.

Fibre cement sheet roofing

064 Where appropriate, incorporate end and side lap sealing strips in fibre cement sheet roofing to the applicable Standard.

Galvanised steel

065 Lay galvanised corrugated sheeting in accordance with Code of Practice 143 section 4 and 10 to allow slight movement between the structural frame and sheeting. Lap all sheets 150mm at the ends and two corrugations at the sides. Fixing by drive screws and washers at maximum 375mm centres, and 2 hook bolts at every purlin. All cut edges of sheets to be coated with acrylic paint

Reinforced plastics

066 Where specified use reinforced corrugated plastic sheets in limited areas in association with roof sheeting of another Material. Lap at the ends and sides, as for the main roofing Material, and seal with approved woven fibre sealing strip.

Fixing sheets

067 Secure the sheets to steel with galvanised steel hook bolts and nuts, and to timber with galvanised steel roofing screws. Do not drill steelwork.

Holing sheets

068 Drill sheet fixing holes through the crown of the corrugations 1.5mm larger in diameter than that of the bolt or screw shank.

Safety precautions

069 Prevent unauthorised persons having access to the area below the roof whilst corrugated sheet roofing is under construction. Do not allow any person to go on to roofing without using crawling boards.

Insulation

070 Butt joint insulation quilts and lay them up to wall plates, leaving sufficient space to maintain adequate ventilation of the roof space. Lay the quilt under electrical cables and over horizontal pipes wherever possible. Do not lay quilt under water storage tanks. Bag quilts to hatches in polythene and securely fix them to the hatch. Insulation to be turned over eaves.

General

071 Clear all debris resulting from roof Works from all gutters.

Leadwork

072 Ensure sheet lead Works are undertaken by skilled leadworkers in accordance with Lead Development Association recommendations and in accordance with the applicable Standard. Do not use solder without the approval of the Client's Representative. Undertake close and open nailing with copper nails at 25mm and 75mm centres respectively. Do not use lead pieces larger than 3.00m in length or 2.20m2 in area.

073 Clips to be fixed with two fastenings not more than 50mm from edge of lead sheet, Clips welted around edges of sheet are to be turned over 25mm.

074 Ensure laps to finishings are no less than 100mm.

075 Form welted joints with a 50mm overlap, 25mm underlap and copper or stainless steel clips at no more than 450mm centres, welt overlap and clips around underlay, loosely turn over and lightly dress down.

076 Dress underlap to drips with splash lap into rebate along top edge of drip, fix to lower level base with two rows of nails, 25mm and 50mm from face of drip, at 75mm centres in each row, evenly spaced and staggered, dress overlap over drip and form a 75mm splash-lap, secure with lead clips, lead burned to underlap at not more than 300mm centres, with not less than 2 clips per bay.

077 Dress underlaps to drips without splash-laps into rebate along top edge of drip and fix with one row of nails at 50mm centres on centre line of rebate, dress overlap over drip to just short of lower level.

078 Form roll joints without splash-lap over wood core rolls, dress under-cloak three quarters over core roll, fix copper or stainless steel clips to roll at not more than 450mm centres, dress lead over cloak around core roll with edge welted around ends of clips, finishing 5mm clear of the main surface.

079 Form roll joints with splash-lap over wood core rolls, dress under-cloak three quarters over core roll, and fix with nails at 150mm centres for a distance of about one third of the length of the panel starting from the head of the sheet, dress over-cloak around core roll and extend on to main surface to form a 40mm splash lap.

Lead flashings

080 For flashings use milled sheet lead to comply with and be in accordance with the applicable Standards.

081 Dress lead flashings to the appropriate profiles without reducing the thickness of the lead sheet.

082 Turn the top edges, which should be welted of all cover flashings 25mm into grooves chased or cut into brick, blockwork or other cladding material, securely wedged and pointed with low modulus silicone mastic in brick, block, masonry and concrete and in other cladding where appropriate.

Asphalt roofing

083 Lay asphalt roofing generally in accordance with the applicable Standard and the recommendations and publications of the Mastic Asphalt Council. Lay underlay loose and with 50mm laps.

084 Lay asphalt roofing in two coats with 150mm laps. Properly bond it to the edges of existing sound sphalt and unless otherwise Instructed by the Client's Representative maintain all existing planes. Provide fillets 50mm on the face at all internal angles. Unless otherwise Instructed by the Client's Representative, ensure that the asphalt surface finish matches the existing surface.

Felt roofing

085 Roofing felt to comply with the applicable Standard unless otherwise specified or guided. Immediately seek Instructions from the Client's Representative if, when removing any defective felt, the base is found to be defective or unsuitable in any way to receive the new felt and that repair of the base is outside the scope of the Order.

086 Lay felts 90 degree to the direction of the roof gradient starting at the lowest point with 75mm side and 100mm end laps, and breaking joints between layers. Apply by mopping, brushing or spraying to achieve an even and full cover of the surface a priming coat recommended for the purpose by the felt manufacturer to all concrete and screed base surfaces. Other than where the Order is for Emergency Works, allow 24 hours to elapse before laying the felt.

087 Partially or fully bond the first layer of felt to the base with oxidised bonding compound to the applicable Standard Bitumen and bituminous binders Framework for specification of oxidised bitumen. Grade as recommended by the felt manufacturer, and heated in thermostatically controlled kettles, to a temperature not exceeding 215^0 Centigrade, but sufficient to provide a 200^0 Centigrade laying temperature.

088 Effect any partial bonding system by spot, strip or frame bonding the first felt layer with hot bonding compound.

089 Fully bond the perimeter of the roof for a width of 450mm, leaving 150mm wide ventilation channels at appropriate centres.

090 Effect a fully bonded system by applying a continuous even coating of hot bonding compound to the base at the rate of 1.5kg/m2. Apply the first layer of felt to provide a complete bond excluding all trapped air. Bond subsequent felt layers to match the underlayer excluding all trapped air. If any air bubbles become apparent in the Works, cut back and renew the felt.

091 Renewing or making good existing roofing:

- Remove existing chippings and clear roof of all dust, dirt, debris, moss and grease;
- Star cut blisters, dry out and re-bond;
- Fill ponded areas of sound roofing to level surface with compound recommended by the felt manufacturer;
- Cut out defective areas of felt, dry out base and patch repair level with existing finish with three layers of matching felt lapped not less than 100mm;
- Cut back to base 150mm width of felt over cracks and splits, dry out and insert 150mm strip of bitumen polyester felt bonded to base at edges only. Fully bond a further layer of bitumen polyester felt over the first strip and lap not less than 100mm onto the existing felt at each edge;
- Remove rainwater outlet gratings and set aside for reuse on completion;
- Cut out all existing skirting's and make good as for new work;
- Renew damaged insulation;
- Remove waterproof coverings from existing skirting's and re-cover as specified.

092 For chippings use coloured non-absorbent natural stone graded 6 to 10 mm/nominal 14 mm single size 6. Ensure gravel guards are fitted to all outlets, scatter chippings at rate of approximately 16kg/m2, on completion remove loose chippings.

093 Use cut back bitumen or a suitable cold applied bitumen based adhesive to applicable Standard as a dressing compound for chippings applied at the rate of $1.5kg/m^2$.

Torch on felt roofing

094 Ensure the existing roof is clean and dry. Cut out and patch blisters, nicks etc. If necessary, prime the surface and allow it to dry. Lay sheeting with 75mm side and 100mm end laps. Loose lay the first specified layer to roof surfaces, but do not carry up angle fillets and vertical upstands. Apply flame to the lower surface directed at the junction with the substrate so as to melt the adhesive across the roll width. Unroll felt onto the molten bitumen and press down firmly. Seal laps with wide bladed scraper and seal the plain finish (not mineral surface) by applying heat from above.

095 Use hard light coloured non-absorbent natural stone chippings graded 6 to 10 mm/nominal 14 mm single size 6. Ensure gravel guards are fitted to all outlets, scatter chippings at rate of approximately 16kg/m2, on completion remove loose chippings.

096 Use cut back bitumen or a suitable cold applied bitumen based adhesive to the applicable Standard as a dressing compound for chippings applied at the rate of 1.5kg/m^2.

Asphalt coverings to balconies and walkways

097 Lay asphalt to balconies and walkways in accordance with the applicable Standard and the recommendations and publications of the Mastic Asphalt Council. Lay underlay loose and with 50mm laps.

098 Use a glass fibre tissue isolating membrane approved by the Client's Representative.

099 Use bitumen coated 'plain expanded' steel lathing of a minimum 26 swg and a minimum 10 mm short way of mesh.

100 Use a high bond primer as approved by the Client's Representative.

101 Use oxidised bitumen suitable for applying hot as bitumen based bonding compound for bonding vapour barriers and for general bonding purposes.

102 Use clean natural coarse sand passing a 60 micron test sieve for rubbing sand.

103 For chipping, use hard light coloured non-absorbent natural stone graded 6 to 10 mm/nominal 14 mm single size 6. Ensure gravel guards are fitted to all outlets, scatter chippings at rate of approximately 16kg/m^2, on completion remove loose chippings.

104 Use cut back bitumen or a suitable cold applied bitumen based adhesive to the applicable Standard as a dressing compound for chippings supplied at a rate of 1.5kg/ m^2.

105 Use a reputable proprietary brand of solar reflective paint approved by the Client's Representative.

106 For aluminium edging, use a proprietary section profiled to suit asphalt manufactured from aluminium.

107 Asphalt concrete to be laid and compacted in accordance with the applicable Standard.

108 Hot rolled asphalt is to be transported, laid, compacted and tested to the applicable Standard.

Inverted Roof Insulation

109 Inverted roof insulation is to be 200mm thick extruded polystyrene board to the applicable Standard, conductivity 0.035 W/mK or less than, strength more than 250pKa at 10% compression, grade/density to be a minimum 30kg/cubic metre. Clean off all dirt and debris from base, lay boards tightly butted and to broken bond pattern, cut cleanly to fit closely around projections, upstands, rainwater outlets etc., lay surface protection.

Single layer plastic roof covering

110 PVC-u single layer membrane to the applicable Standard, minimum thickness 1.2mm laid in accordance with the manufacturer's technical data sheet with not less than 80mm head and side laps secured with the manufacturer's recommended thermal welding, break bond between layers with side laps staggered by one half sheet width, joint edges are to be completed with a bead of liquid PVC, membrane laid on separating

layer as recommended by the manufacturer.

111 Warm deck roof designed in accordance with the applicable Standard and to comprise foil faced polyurethane /PIR foam insulation board to applicable Standard, conductivity less than 0.023 W/mK, strength more than 140kPa at 10% compression, boards fixed in accordance with the manufacturer's technical data sheet with minimum of 6 fixings per square metre, extra fixings may be necessary around roof perimeter.

112 All edge trims, upstands, flashings, verge trims are to be proprietary items supplied as required by the roof covering manufacturer and formed from PVC coated metal and fixed in accordance with the manufacturer's technical data sheet.

Single Ply Membrane Roofing Systems

113 Clean all stone chippings, moss and debris off the entire roof surface to be re-covered and remove from site, felt blisters to be cut open and the damaged are made good, lay 1000 gauge vapour barrier to be laid loose over the entire roof surface, lay 25mm insulation board or 25mm closed cell moisture resistant board, mechanically fixed to the deck before the roofing membrane is laid.

114 Butyl rubber based membrane (Polyisobutylene) 0.75mm thick (fabricated in factory to cover the complete roof) laid on one layer of applicable Standard sheathing felt laid on existing roofing membrane or vapour barrier, the butyl membrane to be ballasted with 18mm diameter round gravel to a depth of 40mm over the entire roof area. The butyl membrane is to be dressed a minimum of 150mm and fully bonded to the upstands of the roof, at intersections between roof and walls the butyl membrane is to be carried up and fully bonded to the wall, turned and pointed into a wall chase for a minimum of 38mm deep, or dressed behind lead flashings, the edge of the membrane is to pointed with the appropriate mastic, the lead flashing is to carefully dressed down.

115 Eaves are to be finished with PVC coated metal "standard" edge trim and "GutterZ" edge trim to all perimeters, butyl membrane is to be stuck down to roof at eaves, a treated timber batten is to be fitted to the eaves where necessary for fixing the trim.

116 Where gutters are incorporated in the roof structure, the insulation is to be stopped at the edge of the gutter, the butyl membrane is to be stuck down to the roof surface in the gutter. The butyl membrane is to be dressed over the eaves and into the gutters or trunk heads and in the case of flat roof outlets, dressed over and into the outlets, fix a 50mm x25mm treated timber batten to all edges to form a stopping piece for the insulation, fixed with suitable fasteners at 400mm centres.

117 EPDM (Rubber Poymer) single ply membrane mechanically attached rubber sheeting, laminated to a non-woven polyester backing to be laid as specified by the Manufacturer's technical data sheet, delivered in sealed rolls and mechanically fixed to decking with galvanised steel discs and self-tapping screws. Fixing to be fully treated with a rustproof coating and have a minimum pull out force of 1.5kN per fixing and applied as 4 No fixings per m^2 on flat roof surfaces, 8 no per m^2 on edge zone and 12no per m^2 on corner zone. All joints are to be sealed by using hot bonding splicing machine with a 150mm wide splicing strip specially developed for hot-bonding application.

118 Fully bond the roofing membrane at intersections between roofs and walls with butyl adhesive applied to the wall. Lead flashings are to be fitted to prevent the ingress of rain, the roofing membrane is to be fully bonded to the wall surface under the lead flashing.

Metal Tile Roofing

119 Metal tile roofing shall comprise:

- Natural stone chip with acrylic overglaze finished proprietary metal roof tiles each size 1330mm x 450mm x 0.9mm thick, pantile in profile, and terracotta or charcoal or green or red in colour, each tile fixed with four no 50mm x 2.5mm coated fixing nails driven through the down turned nose of the tile into 50 x25mm sawn softwood applicable Standard battens fixed to each support with round galvanised steel nails 65mm long x 3.5mm, with additional battens where necessary to prevent underlay being opened at laps by wind suction.

- Underlay to be reinforced felt to the applicable Standards, laid with minimum 150mm horizontal and vertical laps and fixed with galvanised steel extra-large head felt nails parallel to eaves so that water

will drain freely, laps to coincide with supports, including all abutments, eaves, verges, ridges, hips and valleys

- All to be in accordance with Code of Practice for Lightweight Metal Roofing.

Metal Profiled /Flat Sheet Claddings

120 Plain Galvanised corrugated iron sheeting is to be in accordance with CP 143-10:1973, 24 gauge in sheets each 1260mm x 370mm, laid in accordance with the Manufacturer's technical data sheets from ridge to eaves, with side-laps being at least 2 corrugations and 150mm minimum end laps, sheets to fixed with drive screws and washers placed at maximum 375mm centres to 38mm x25mm battens, and secured to purlins with at least 2 bolts. Seams to be made watertight with suitable lapping material and secured with self-tapping screws or bolts at maximum 450mm centres. Breathing felt to applicable Standard lapped and carried into gutter is to be installed under corrugated sheeting.

121 Ridge to be galvanised sheet 22mm gauge to comply with the applicable Standard, ridge capping to be formed from equal angle pieces with 200mm sides formed to fit securely on top of galvanised roofing sheet.

Plastic profiled Sheet Claddings

122 PVC-Ue planks (Open 'V' joint, shiplap or Tongued and Grooved) in cladding shall comprise:

- Lightweight foamed cellular core and homogeneous skin of PVC-UE having a nominal thickness of 0.6mm manufactured in accordance with the applicable Standards;
- Extruded Cellular Unplasticised (PVC-Ue) Profiles:
- Standard length: 5m
- Cover width: maximum 100mm
- Nominal thickness; 6mm
- Fire resistant to Class 1Y to applicable Standard;
- Weight: Not less than 0.50kg metre;
- Density: Not less than 500kg/m^3;
- Appearance: Self-coloured smooth semi-matt or glass finish;
- Fixing: Maximum 600mm centres, 5mm gap every 5m run and at abutments for thermal expansion of plank and joint ends;
- Method of fixing: 30mm hot dipped galvanised or stainless steel jagged nails with staggered joints;
- Perimeter Trims: Single or two part PVC-Ue trims (capping's, angle pieces, closure pieces, flashings, trims, sill) as manufacturer's technical data sheet;
- Breather membrane; Spun bonded polypropylene BBS certified, vapour resistance to be no more than 0.6MN.s/g and fixed with galvanised or stainless steel fixings every 300mm at studs and every 150mm at edges , horizontal laps to be 100mm, vertical laps 150mm and staggered to shed water away from substrate and structure;

123 PVC-Ue chipped finished planks in cladding shall comprise:

- Lightweight PVC-Ue not exceeding 7kg/m^2 and a density of between 0.5 and 1.5kg/m^3;
- Impact resistance strength: 30k/m^2;
- Yield Stress: at/more than 14.5N/mm^2;
- Tear Strength: at/more than 13.5N/mm^2;
- Bending Stress: 18N/mm^2;
- Elasticity module; at /more than 640/mm^2;
- Fixings pull out strength: at least 500N;
- Thermal Impact: in accordance with BRE Digest 228
- Surface spread of flame: both internal and external surfaces to Class O, tested in accordance with applicable Standards, All fixings to be non-ferrous
- Fixing supports to ETAG001 and ETAG 029
- Fire resistant to Class 1Y to applicable Standards;
- Weight: Not less than 0.50kg metre;
- Density: Not less than 500kg/m^3;
- Appearance: Self -coloured smooth semi-matt or glass finish;

124 The system will be required, under testing, to prevent transfer of water across the cavity to the masonry of the existing building under peak pressure testing to Class R7 as set out in applicable Standard.

125 If battens are used to create a minimum 25mm vented cavity they must be formed from the same material as the cladding planks, the vented cavity is to provide adequate ventilation to remove any condensation or water permeating through the system before it reaches the masonry with drainage openings of at least 10mm;

- Defection in accordance with the applicable Standards. All testing must be in accordance with current applicable Standards.

- The system must be able to accommodate building movement and must be secured to suitable non-ferrous cladding rails/support structure approved by the manufacturer;

- Aggregate: between 3 and 6mm incorporated into the surface of the cladding under strictly controlled factory conditions with the colour aggregate pre-mixed under quality controlled factory procedures to achieve uniformity.

126 PVC-Ue Fascia/Barge or Barge Overlay Board shall comprise:

- Profile: Bull nosed or square edge with ribbed back;
- Composition: Low density cellular (closed cell) core and homogeneous impact resistant skin of PVC-UE. Manufactured in accordance with the applicable Standard UV stability and UV aged impact resistance requirements;
- Dimensions: Width Minimum 175mm;
- Thickness: Minimum 9mm;
- Weight: Average density 500kg/m^3, Tolerance deviation of +/-12.5% per m length;
- Tolerances Width: 151mm – 250mm +/- 1.5mm;
- Tolerances Thickness: 5mm – 12mm +/- 0.5mm, over 12mm +/- 0.75mm;
- Tolerances Length: 5m =10mm-00mm;
- Flatness; Must not exceed +/- 0.6mm over 100mm;
- Thermal Movement: Linear thermal expansion of less than 7mm x 10.5 degree C. Tested in accordance with applicable Standard;
- Fire Resistance: Satisfy the requirements of the applicable Standards particularly Class 1 spread of flame;
- Colour Fastness: in accordance with the applicable Standard;
- Water Absorption: Less than 1% when tested in accordance with the applicable Standard
- Appearance: Self-coloured smooth gloss finish;
- Method of fixing: As specified by manufacturer
- Jointing/edge trims: matching colour, single or two part PVC-Ue trims as manufacturer's details and fixed in accordance with manufacturer's technical data sheet

127 PVC-Ue Fascia or Barge Board

As Clause 126 but minimum thickness 16mm

128 PVC-Ue Soffit Boards shall comprise:

- Profile: Flat solid board plain or shiplap profile sheet, depending upon application;
- Composition: Low density cellular (closed cell) core and homogeneous impact resistant skin of PVC-UE. Manufactured in accordance with the applicable Standards UV stability and UV aged impact resistance requirements;
- Dimensions: Width Variable, but not greater than 300mm;
- Thickness: Minimum 9mm;
- Weight: Average density 500kg/m^3, Tolerance deviation of +/-12.5% per m length;
- Tolerances Width: 151mm – 250mm +/- 1.5mm, 251mm – 350mm +/- 2.00mm;
- Tolerances Thickness: +/- 0.5mm;
- Tolerances Length: 5m - 10mm-00mm;
- Flatness; Must not exceed +/- 0.6mm over 100mm;
- Thermal Movement: Linear thermal expansion of less than 7mm x 10.5 degree C. Tested in accordance with applicable Standard;
- Fire Resistance: Satisfy the requirements of the applicable Standard particularly Class 1 spread of flame;
- Colour Fastness: in accordance with the applicable Standard;
- Water Absorption: Less than 1% when tested in accordance with the applicable Standard;
- Appearance: Self-coloured smooth gloss finish;
- Method of fixing: As specified by manufacturer
- Jointing trims: matching colour, single piece PVC-Ue trims as manufacturer's details and fixed in

accordance with manufacturer's technical data sheet

129 PVC-Ue Pre-vented Soffit Boards shall comprise;
As Clause 128 but with flat solid board pre-vented depending on application;

130 A ten year warranty on the performance and colourfastness of all PVC-UE fascia, barge, soffit board and wall cladding systems must be provided prior to installation.

131 Eaves Ventilators generally are to provide a continuous air gap of either 10mm or 25mm to the applicable Standard as required, to have BBA certification or equivalent, and to be proprietary preformed PVC-u, provided with fixing holes and with slots in ventilator being not more than 4mm to prevent entry of vermin. Eaves ventilators are to be fixed in accordance with the manufacturer's technical data sheet and are to be either:

- Proprietary behind facia ventilation system: with soffit attachment, fixed behind fascia; or
- Proprietary over fascia ventilation system: fixed to top of fascia board; or
- Proprietary over fascia ventilation system; with polypropylene felt support, and fixing to top of fascia and rafters; or
- Polypropylene twist and lock soffit ventilators, 70mm diameter, designed to exclude wind driven rain and large insects, openings not to exceed 4mm, to provide 10,000 mms/m, installed at 200mm centres, mechanically secured in accordance with manufacturer's technical data sheet;
- Polypropylene spring fitted ventilators (10-15 degree roof); soffit attachment size 285mm x 115mm, designed to exclude wind driven rain and large insects, openings not to exceed 4mm, to provide 25,000 mms/m, installed at 480mm centres to 10-15 degree roofs, mechanically secured in accordance with manufacturer's technical data sheet.

132 Proprietary rafter tray ventilation system: to have BBA certification or equivalent and to provide ventilation to the applicable Standard, with corrugated rigidised PVC-u spacer sheet inserted between rafters at eaves to maintain a continuous 25mm min air path parallel with the roof slope, to prevent insulation blocking the ventilation path to eaves ventilators, and to prevent condensation forming under the underlay. Fitted to project 100mm beyond wall plates. Insulation re-inserted over wall plates but not projecting beyond the end of the spacer sheet. Fitted 800mm along roof slope 25mm deep, cut as required to fit and tacked in place between the rafters at top with galvanised tacks/thick staples.

133 Proprietary rafter tray fly screened ventilation system: to have BBA certification or equivalent and to provide ventilation to the applicable Standard, with corrugated rigidised PVC-u spacer sheet inserted between rafters at eaves to maintain a continuous 25mm min air path parallel with the roof slope, to prevent insulation blocking the ventilation path to eaves ventilators, and to prevent condensation forming under the underlay. Fitted to project 100mm beyond wall plates. Insulation re-inserted over wall plates but not projecting beyond the end of the spacer sheet. Fitted 800mm along roof slope 25mm deep, cut as required to fit and tacked in place between the rafters at top with galvanised tacks/thick staples.

134 Proprietary rafter tray ventilation system for refurbishment, installed from underside of roof to avoid disruption of roof covering: to have BBA certification or equivalent and to provide ventilation to the applicable Standard, with corrugated rigidised PVC-u spacer sheet inserted between rafters at eaves to maintain a continuous 25mm min air path parallel with the roof slope, to prevent insulation blocking the ventilation path to eaves ventilators, and to prevent condensation forming under the underlay. Adjust to suit roof pitch, pull back existing insulation and push tray into eaves, ensuring not to project beyond the top of the rafters, Fix to wall plate as recommended by the manufacturer, relay insulation over the wall plate but not projecting beyond the end of the spacer sheet. Fitted 800mm along roof slope 25mm deep, cut as required to fit and tacked in place between the rafters at top with galvanised tacks/thick staples.

GRP Flat Roofing

135 GRP Flat roof specification will comprise the following activities:-

1. All existing stone chippings, felt coverings etc. are to be cleared from the roof area. Substrate, is to be stripped to expose the main roof joists.
2. Additional timber firring pieces are to be fitted to existing joists to give a fall to the new deck.
3. The roof is re-decked with 3/4" (20mm) exterior Grade Plywood securely anchored with 3" annular ring shank nails and /or 3" plated wood screws to the roof joists.
4. Purpose made, pre-moulded, edging trims, wall fillets, gully mouldings are to supplied as necessary and installed in position.
5. Glass-fibre mat of 4oz / sg.m density is supplied and laid over the whole roof area. The glass-fibre mat is then impregnated with polyester resin onto the new deck to form a seamless GRP membrane.
6. Once curing time has elapsed, usually between 1- 4 hours depending on ambient temperature, a polyester resin gel coat in a chosen colour will be applied to the whole roof area.
7. Where a flat roof meets brick walls, a chase is to be cut into a chosen coarse approximately 1.5" deep. A glassfibre and resin flashing will be tailor made to fit into the chase. The chase is then to be re-pointed with conventional sand / cement mortar.
8. Where a flat roof meets a tiled roof, as in the case of a dormer construction, the glass-fibre membrane is to be extended between 150 to 300mm up and under the tiled roof area

GRP Canopies

GRP PURPOSE MADE FRONT DOOR CANOPIES

136 GRP purpose made front door canopies are to meet the following criteria:

- Primary support structure: Existing concrete brick or block work.
- GRP components:
  - Construction: Designed to direct water away from the main structure/dwelling;
  - Finish: Standard smooth matt finish;
  - Colour: Dark Grey;
  - Nominal size: 1600mm long x 900mm wide x 200mm deep;.
  - Fire rating:
    - Spread of flame (component external face): Class 0 (National class).
    - Spread of flame (component internal face): As external face.
- Fixings and fasteners: Fixings to be concealed and as tested and recommended by canopy manufacturer to withstand calculated wind and snow loads;
- Joints: Upper-side to have standing seam effect finish at 600mm centres, underside to have timber tongue and groove effect finish; and
- Accessories/Other requirements: Drip bar to front soffit. Provide a sample canopy to the Client's Representative prior to installation.

137 Thermal Performance/Bridging Requirement: Complete thermal design to avoid excessive thermal bridging. Assessed to BRE Information Paper 1/06.

138 Weather Resistance Requirement: Weathertight, with full allowance made for deflections and other movements.

139 Colour Fastness/Appearance of GRP, Colour fastness of pigments: Not less than standard 6 when measured to the applicable Standard B01C:LFS6, The Provider is to submit evidence of compliance.

140 Colour Fastness/ Appearance Samples are to be provided as follows:

- Weathered samples: If available, submit naturally weathered samples, otherwise submit artificially weathered samples.
- Naturally weathered samples:
  - Pigments and resins: As proposed GRP.
  - Age: Not less than two years.
  - Action: Submit with new un-weathered control samples.
- Artificially weathered samples:
  - Pigments, resins and gel coat: As proposed GRP.
  - Test method: Accelerated weatherometer subjecting samples to moisture and ultraviolet light.
  - Duration: Not less than 1500 hours.
  - Action: Submit with new un-weathered control samples.

141 Canopy Design Samples are to be provided as follows:

- GRP samples: Before general manufacture obtain approval of appearance of fully tested compliant

design samples.
- Extent: Showing proposed colour, texture and incorporating a completed section of a joint.
- Action: Obtain approval of appearance before proceeding. Retain as production control sample.

Manufacture of GRP Canopies

142 Quality of Work is to conform to:
- Manufacture: Compliant with design and performance requirements.
  - Materials: Appropriate and compatible.
  - Workmanship: Appropriate and in accordance with manufacturers' recommendations.
- Resins: Used as supplied and not adulterated.
- Standard of finish: Appropriate to end use and position in building.
  - Prohibited blemishes: Including, but not limited to, wrinkling, spotting, striations, fibre patterning, fish eyes, blisters, crazing, cracking, dry patches and uneven or inconsistent colour.

143 Manufacturing Accuracy to conform to:
- Finished dimensions of completed units when erected:
  - Ambient temperature: Measurements taken at 16-18°C.
  - Maximum permissible deviations as table below:

Overall dimension involved (m)	Up to 2 m	2-3 m
Width and height:	0-2 mm	0-3 mm
Straightness of edges: deviation from intended line, any variation to be evenly distributed with no sudden bends or irregularities.	3 mm	4 mm
Squareness: taking the longer of 2 sides at any corner as a base line, the deviation of shorter side from perpendicular; dimension involved is the shorter side.	3 mm	4 mm
Twist: deviation of any corner from the plane containing the other 3 corners; dimension involved is the shorter side.	3 mm	5 mm
Flatness - deviation under a 1 m straight edge placed anywhere on a flat panel surface:	3 mm	3 mm

144 Suitability of Structure:
- Provider's survey:
  - Scope: Geometric survey of supporting structure, checking line, level and fixing points.
  - Give notice: If structure will not allow required accuracy or security of erection.
- Setting out: Establish erection datum points, lines and levels.

145 Installation of Interfaces
- General: Locate flashings, closers etc. correctly with neat overlaps to form weathertight junctions.

NFRC Competent Person Scheme for roofing

146 The Provider or an approved subcontractor undertaking any aspect of the roofing works should be registered as a member of the NRFC Competent Person (CPS) to facilitate the self-certification of residential, industrial and commercial work that falls under the auspices of the Building Regulations 2010 Approved Document L1B (as amended 2010, 2011, 2013, 2016 and 2018).

147 The Provider or the approved subcontractor must submit to the relevant local authority building control department, the relevant Building Regulations Compliance Certificate within 30 calendar days of the completion of any roofing Works that are covered by Approved Document L1B, these include but are not limited to:

- Slating and tiling and all other pitched works;
- Felt, single ply and GRP;
- Fully supported lead, copper, zinc and standing seam aluminium;
- Liquid applied waterproofing;
- Mastic asphalt;

- Reinforce bitumen membranes;
- Sheeting;
- Rooflights (inserted between rafters)

Client's current manufacturers/suppliers/products

148 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

CARPENTRY AND JOINERY

CARPENTRY AND JOINERY

GENERAL

Generally

001 Where necessary cut out for butts/hinges when replacing door or window frames/linings or piecing in new timber.

002 Note that all sawn timber sizes quoted in the Schedule of Rates are nominal sizes.

003 Stain or prime and undercoat all prepared timber all round before fixing, as described in the "Painting and Decorating" Section.

004 Comply with the "Painting and Decorating" Section where Works include items being painted, decorated, stained, touched up or prepared for decoration. Match the finish and type to the existing or surrounding finish as appropriate.

005 Where painted skirtings and architraves are specified, at the Provider's option use an MDF equivalent where this is approved by the Client's Representative.

006 Match any purpose made items (when specified) to the existing items as far as possible.

MATERIALS

Timber

007 Use only suitable, sound, well-conditioned, properly seasoned preservative treated whitewood from a source approved by the Client's Representative that is free from any defects making it unsuitable for its intended purpose. All timber to be FSC or PEFC certified or from equivalent independently verifiable sustainable sources.

008 Level and pack all structural timber. Structural timber shall comply with applicable Standard. The dimensions of a timber floor, ceiling or roof member may be determined by the guidance given in applicable Standard span tables for solid timber members in floors, ceilings and roofs for dwellings published by TRADA. Timber for floors and roofs shall comply with applicable Standards. Strength classes, species, grades and species combinations referred to be as defined in the applicable Standards.

009 Cross sectional dimensions are to be either basic sawn or regularised sizes as defined in applicable Standard. Trussed rafter roofs are to be braced to applicable Standard. Structural timber shall be C16 or C24 grade timber to comply with loadings and spans as set out in the current Approved Document A of the Building Regulations, 2010 (amended 2013). The section sizes shall be in accordance with tolerance class 1 of the applicable Standard, or are CLS/ALS processed sizes in accordance with tolerance class 2 of the applicable Standard.

Graded Softwood for Structural Use:

- Stress graded to applicable Standard or other national equivalent and so marked.
- Strength class to applicable Standard.

010 Trussed Rafters generally are to be designed and fabricated to applicable Standard, truss members shall be 44mm (minimum) finished thickness, ceiling ties and top chord members shall have 97mm finished depth, all trussed rafters shall be nail plate connected.

011 Softwood for use with leadwork shall be planed, free from wanes, pitch pockets, decay and insect attack except pinhole borers, with a moisture content of not more than 22% at time of covering.

012 Cross section dimensions of timber shown on drawings are nominal sizes unless stated otherwise. reduction to finished sizes of planed/regularized timber to be to applicable Standard.

013 Moisture content of timber at time of erection to be:
- Structural timber 20% + or - 2%, kiln dried.
- Fascias barge boards and the like 18% + or - 2%.

014 Keep timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing. Store timber and components under cover, clear of the ground and with good ventilation. Support on regularly spaced, level bearers on a dry, firm base. Open pile to ensure free movement of air through the stack. Arrange sequence of construction and cover timber as necessary during and after erection to ensure that specified moisture content is not exceeded. Keep trussed rafters vertical during handling and storage

Preservative treatment of timber

015 Treat softwood described as "treated" or "impregnated" before delivery to the Property with either:
- an appropriate preservative under vacuum-pressure with an average net retention of at least 4kg of dry salts per cubic metre; or
- an organic solvent type preservative giving an overall retention of 16Kg of solution per cubic metre of timber.
- Generally - Structural Timber, Fencing and the like:
- Where subsequent cross-cutting or boring of the treated timber cannot be avoided all exposed surfaces shall be liberally swabbed with a proprietary end grain timber preservative to maintain the integrity of the protective system.
- All treated timber shall show only negligible dimensional change or distortion, otherwise it will be rejected.
- The end use of timber must be quoted by the Provider to the treatment company.
- A certificate of treatment to cover all timbers processed shall be supplied by the treatment company to the Provider.
- A certificate of treatment shall be supplied by the Provider for each batch of timber treated.

Fixings

016 Framing anchors are to be galvanised steel, fixed securely using not less than the number of nails recommended by the anchor manufacturer. Nails to be not less than 30mm x 3.75 mm galvanized or sherardized square twist unless recommended otherwise.

017 Truss clips are to be galvanised steel, fixed securely with 32mm x 3.5mm galvanised square twisted nails in every hole.

018 Anchor straps are to be galvanised steel, fixed securely to timber with three 30mm x 3.75mm galvanized nails and to masonry with four 50 mm x 8 gauge galvanised screws evenly spaced.

019 Lateral restraint straps are to be galvanised steel, ensure that cranked end is in tight contact with cavity face of wall inner leaf and is not pointing upwards. Fix noggings and packs beneath straps which span joists/rafters/ties running parallel to wall, noggins and packs to fit tightly and be not less than three quarters of joist/rafter/tie depth. Notch joists so that straps fit flush with surface. Do not notch rafters/ties. Fix straps to joists/rafters/ties with seven 50 mm x 1½ mm gauge galvanised countersunk screws, evenly spread.

020 Bolts and nuts shall be cup square with large washers and nuts, and comply with applicable Standard - Washers shall comply with applicable Standard.

021 Expanding bolts shall be Grade A4 stainless steel and shall be of a type to suit the purpose for which they are required, fixed security in position in accordance with manufacturers technical data sheet.

022 Canopy cleats are to be galvanised steel, fixed securely to timber with 50mm x 1½ mm galvanised screws.

023 Retaining strap to be galvanised steel, with site applied bituminous paint coating, and bedded securely in mortar.

024 Expanded metal fixing strip to be galvanised expanded metal lathing to applicable Standard zinc coated and fixed securely by building into position.

025 Fastenings for materials and components forming part of external construction to be of corrosion resistant material or have a corrosion resistant finish.

026 Fastenings for materials and components, forming part of external construction but not directly exposed to the weather to be of corrosion resistant material or have a corrosion resistant finish, directly exposed to the weather to be of corrosion resistant material.

027 Cartridge operated fixings are not to be used without the permission of the Client's Representative. Tools to be manufactured to applicable Standard and Kitemark certified. Fasteners, accessories and consumables to be types recommended by the tool manufacturer. Operatives to be trained and certified as competent by tool manufacturer. Ensure that operatives take full precautions against injury to themselves and others. Shot fixing is to give secure fixing at 750mm centres.

Nails, etc

028 Use sheradised nails for fixing joinery having an external exposed face in accordance with applicable Standard, punched in below the surface and filled with an approved filler.

Joinery Timber

029 Softwood planed finish joinery timber which will be exposed to view shall be European Redwood minimum density 510kg/m3, class J10 of applicable Standard.

030 The following defects shall not be permitted: pinholes shown on the surfaces; sloping grain exceeding one in eight; checks, splits and shakes in excess of those permitted by class J10 of applicable Standard; knots, excepting isolated sound tight knots of less than 20mm diameter or no wider than half the width of the section; any evidence of beetle attack or decay. Softwood not exposed to view will be accepted with minor defects with the exception of active beetle attack or decay.

031 Where hardwood is specified, use hardwood of one of the following species of the applicable Standard suitable for the purpose, un-replenish able tropical hardwoods are not to be used

Oak	North American	Density range 590-930 kg/m^3
Beech		Density range 700-900 kg/m^3
Ash	North American	Density range 650-850 kg/m^3
Maple	North American	Density range 600-750 kg/m^3
Cherry	North American	Density range 700-900 kg/m^3
Utile		Density range 650-725 kg/m^3
Mahogany	South American	Density range 500-650 kg/m^3
Mahogany	West African	Density range 500-650 kg/m^3
Dark Red Luan	Philippine	Density range 650-725 kg/m^3
Iroko		Density range 650-725 kg/m^3
Dark Red Meranti		Density range 650-725 kg/m^3

032 Tongued and grooved floorboarding is to comply with applicable Standard

033 Ensure the moisture content based products at time of installation: to be no more than:

- internal joinery is no more than 20% (8-12% when timber is in an existing Property which is centrally heated); and
- external joinery is no more than 18%.+ or-2%
- structural timber 20% + or -2%, kiln dried

Plywood, blockboard, particleboard, hardboard etc.,

034 Plywood panel products for structural use shall conform to applicable Standard for designs to applicable Standard plywood may be selected from those listed in applicable Standard or shall have certification from a suitable body such as the Agrément board.

035 Marine plywood shall comply with applicable Standard, marine plywood manufactured from selected untreated tropical hardwoods, durability class H, surface grade 11, and with sanded surface finish.

036 Plywood designed to applicable Standard shall be subject to the quality control procedures of one of the organisations listed in that standard, or to the controls listed by the certification body.

037 The specification for plywood shall state the following information where appropriate:
- type
- Standard
- grade
- Species
- nominal thickness
- number of plies
- finish (sanded/unsanded)

038 Plywood exposed to the weather shall have no open defects (e.g. checks, knots, holes, splits) on the exposed face(s) unless it is used only for a temporary application such as hoarding.

039 Prior to receiving a painted finish, plywood shall be adequately sanded.

040 All cut edges that may be subject to weather exposure shall be sealed with a suitable sealant or applied finish; typically these shall be one of the following:
- Special sealing compounds, such as pitch epoxy
- non-setting mastic, where the plywood is set in frames.
- timber beading bonded with suitable adhesives.

041 In construction the following procedures shall be observed:
- lower edges of boards shall be bevelled to promote shedding of water.
- plywood used as infill panels shall be fully painted before installation and/or assembly.
- cavities behind boards shall be adequately ventilated and drained to allow dispersal of moisture.
- clearance shall be allowed at selected joints to allow free drainage of water.
- plywood junctions with masonry shall provide adequate clearance to allow drainage, prevent capillary absorption of water and provide enough space for maintenance of edge sealing.
- the bottom edges of boards shall stand well clear of flashings, roof coverings, sills, and the ground.
- exposed and/or inadequately protected fixings shall be of non-ferrous metals and have adequate corrosion resistance.

042 WBP sanded and unsanded finished plywood is to be in accordance with applicable Standard, appearance classification E or I.

043 Oriented strand boards shall be in accordance with applicable Standard and supplied in accordance to use:
OSB/1 general purpose no loading boards and boards for interior fitments for use in dry conditions;
OSB/2 load-bearing boards for use in dry conditions;
OSB/3 load-bearing for use in humid conditions;
OSB/4 heavy duty load-bearing boards for use in humid conditions;

044 Particleboards shall be in accordance with applicable Standard Type 5, for chipboard flooring, use the appropriate waterproof moisture resistant grade suitable for the purpose.

045 Hardboard shall be to applicable Standard. Ensure hardboard used to form bath panels has an enamelled surface and Type TE Tempered.

046 Ensure all block-board complies with the applicable Standard and to be to a standard and quality approved by the Client's Representative, lamin-board used is five-ply and veneer is of the specified species of timber (but where none is specified, it is an appropriate species of timber).

Priming

047 Prime timber in accordance with the finish coat specification. Use a primer recommended by the manufacturer of the surface coating.

Preservative treatment of timber

048 Treat softwood described as "treated" or "impregnated" before delivery to the Property with either:
- an appropriate preservative under vacuum-pressure with an average net retention of at least 4kg of dry salts per cubic metre; or
- an organic solvent type preservative giving an overall retention of 16Kg of solution per cubic metre of timber.

049 Generally - Structural Timber, Fencing and the like, shall be treated in accordance with Clause 015.
- Where subsequent cross-cutting or boring of the treated timber cannot be avoided all exposed surfaces shall be liberally swabbed with a proprietary and grain timber preservative to maintain the integrity of the protective system. All treated timber shall show only negligible dimensional change or distortion, otherwise it will be rejected. The end use of timber must be quoted by the Provider to the treatment company.
- A certificate of treatment to cover all timbers processed shall be supplied by the treatment company to the Provider. A certificate of treatment shall be supplied by the Provider for each batch of timber treated.

050 Generally - Joinery Components, Fascias and the like, shall be treated by spirit based double vacuum process and shall be machined to it's final dimensions before treatment and then assembled. All treated timber shall show only negligible dimensional change or distortion, otherwise it will be rejected.

051 Treat ground contact timber before delivery to the Property with an appropriate preservative under vacuum pressure with an average net retention of at least 5.4Kg dry salts per cubic metre of timber.

052 Cut timbers to their final dimensions before impregnation. Where this is not possible, liberally swab any sawn or cut faces or borings with an appropriate preservative from the impregnation plants.

053 After treatment, carefully open-stack the timber in a well ventilated covered space to enable surplus solvent in the preservative to dry out by evaporation. Ensure all treated timber is dry before incorporation in the Works.

054 Allow items of carpentry timber treated with an appropriate preservative a minimum of 3 weeks air drying period following treatment and before fixing. Allow joinery timbers similarly treated a minimum of 6 weeks air drying following treatment and before fixing.

055 Provide a copy of the relevant Preservation Treatment Certificate to the Client's Representative.

Adhesives

056 Ensure adhesives for:
- exterior use are synthetic resin type WBP; and
- interior use are synthetic resin type of moisture resistant durability ("MR").

Timber fillers for rotted woods

057 Ensure timber fillers for rotted softwoods and hardwoods are a complete system appropriate for the type of wood.

Storage of material

058 Protect joinery from the weather during transit. At all times before fixing, both before and after priming, store it under cover and clear of the ground.

Door frames and linings

059 Ensure external door frames without cills have 12.5mm diameter x 100mm long galvanised steel dowels housed into the bottom of each leg leaving 50mm projecting. Ensure the frames for fire resisting doors are of a type approved by the Client's Representative. Ensure frames for half hour doors have 25mm minimum stops.

Doors generally

060 Note that fire door ratings in the Schedule of Rates are shown in hours. Ensure the integrity of the door (including all hinges, ironmongery etc) achieves this when fitted to a frame with or without intumescent strips. Where it is necessary to use hinge packers or pads on fire rated doors, frames or door sets ensure that only intumescent types are used.

061 Ensure all external doors (other than flush doors) are from solid timbers. Do not use veneers or laminations.

Ledged and braced doors

062 Ensure ledged and braced doors consist of 3 No. 150mm x 25mm horizontal ledges with bevelled edges, 125 x 25mm, parallel braces and 100 x 19mm tongued and grooved and V-jointed matching with:

- the braces being obliquely jointed to the ledges with their lower ends adjacent to the hanging side of the door;
- each board being nailed to the ledges and braces using at least 2 No. nails 50mm long at each ledge and one at each brace;
- the ends of ledges being screwed back to the match boarding from inside and stopped in;
- all timber being primed before the door is assembled; and
- the end grain being primed with two coats of aluminium primer.

Framed, ledged and braced doors

063 Ensure framed, ledged and braced doors consist of 100 x 50mm stiles and top rail, 175 x 38mm middle and bottom rails, 100 x 38mm braces and 100 x 12mm tongued and grooved V-matching with:

- the top rail being haunched, morticed and tenoned to the stiles;
- the middle and bottom rails being bare faced, morticed and tenoned to the stiles;
- the top rails grooved to receive the tongues of the tongued and grooved V-jointed matching;
- the braces being stub tenoned into the rails and stiles;
- the tongued and grooved V-jointed matching being secured to the rails and braces by lost head nails hammered in from the faces;
- all joints being jointed with WBP glue to standard and quality approved by the Client's Representative;
- all boarding and timber faces covered being primed before assembly including all rails, grooves and matching;
- the end grain being primed with aluminium primer;
- the frame being securely cramped;
- all mortice and tenon joints being secured with hardwood wedges well driven home; and
- the whole being assembled perfectly square and free from winding.

Flush doors

064 Ensure 35 or 40mm thick internal flush doors consist of a skeleton or honeycomb core, lipped on two stiles with hardwood strips – each lipping should be a minimum of 6mm and to be full thickness of the door.

065 Hardwood faced doors are to have selected hardwood veneered, MDF or High density chipboard of 3.2mm thickness, Veneer type: Koto, Beech, African Mahogany, Maple, Cheery, Oak or Sapele lippings to match or compliment face veneer, pre-finished factory applied clear lacquer to both faces.

066 Ensure 44mm thick external flush doors are faced on both sides with 6mm external quality resin bonded plywood, for painting or staining to applicable Standard on a solid core. Provide glazing apertures with a rebated, sunk and rounded Utile cover mould and Utile hardwood glazing beads with mitred angles. Ensure the glazing cover piece and beads are no less than that required by the relevant applicable Standard or equivalent for glazed apertures.

067 Opening for glass to be 400mm x 600mm high.

Half-glazed flush doors

068 Ensure the opening for glass in doors described as half-glazed:
- extends the full width between stiles; and
- is at least 680mm high.

069 Ensure:
- glazing apertures are provided with a rebated, sunk and rounded Utile cover mould and Utile hardwood glazing beads with angles mitred; and
- the glazing cover piece and beads are no less than that required by the relevant applicable Standard or equivalent for glazed apertures.

Panel doors

070 Ensure panel doors:
- are jointed with mortice and tenon joints and WBP glue;
- have ply panels that are a minimum of 6mm thick external quality WBP plywood for painting or staining; and
- have the joint between the ply, stiles and rails sealed at the time of assembly with primer.

Fire check flush doors

071 Ensure fire check flush doors are to the fire rating specified in the Schedule of Rates and this Specification.

Windows

072 Provide timber windows with guarantees as table below. Provide timber surrounds for steel windows as approved by the Client's Representative.

Timber Frames	30 year guarantee against fungal attack
Timber Window Manufacturing Defects	10 Year guarantee
Timber Window (Factory Painted External Joinery)	10 Year guarantee (as minimum)
Timber Window (Factory Stained External Joinery	6 Year guarantee (as minimum)
Hardware Components	10 Year guarantee (as minimum)
Double Glazed Units	15 Year guarantee (as minimum)

PVC-u doors and windows

073 Ensure all PVC-u windows and doors are:
- constructed from high impact modified PVC-u; and
- manufactured from base materials guaranteed against decomposition and for colour fastness for a minimum of 25 (twenty five) years.

074 Guarantee the fabrication of all PVC-u frames and sashes against failure of welds, mechanical joints etc., for a minimum of 25 (twenty five) years.

075 Guarantee double glazed units against failure of the unit for a minimum of 15 (fifteen) years.

076 Guarantee hardware components against failure of the unit for a minimum of 10 (ten) years.

077 Protect PVC-u items against damage during the course of fixing.

078 Ensure windows provided can be opened to allow a secure trickle ventilation.

079 Ensure the accurate measurement of the Works and correct any measurement errors. (Tolerances – the overall height and width of an assembled frame shall not differ from the work size by more than +/- 3mm when measured at (20 +/- 5) ˚C, with a maximum difference of 3mm at any point. For assemblies with outer frames having three or more joints per frame member, the deviation shall not be more than 4mm when similarly measured. Frame assemblies shall be such that they can be installed in a square opening with a maximum difference in the diagonal of 4mm).

080 Ensure all window frames show a 50mm-60mm face on the outside of the frame.

081 Construct doors from a profile with a minimum of 100mm width showing face.

082 Ensure doors:
1. are double panelled type 2XG or 2XGG;
2. have the top panel double glazed in toughened glass;
3. have a bottom panel similarly double glazed or PVC-u skinned/foam sandwich with PVC-u frame; and
4. have the panels screwed and wedged.

083 Use door and window furniture suitable for the doors and windows approved by the Client's Representative that meets the following requirements:
5. door locks and furniture comprise:
6. 1½ pairs of heavy duty hinges;
7. cylinder lock;
8. letter plate - white plastic gravity type (front doors only);
9. 1 No. heavy duty multi-point lift lever espagnolette locking system with return lever handle action to horizontal position when locked;
10. lever handles;
11. numerals (front doors only);
12. stormproof cill/threshold with integral weather seals; and
13. rain deflector/weatherboard;
14. turn tilt windows have:
15. a key operated 'tilt barrier' approved by the Client's Representative;
16. child locks, where the windows are fitted on or above the first floor level; and
17. a switch barrier; and
18. casement windows (outward opening) have:
19. friction hinges with espagnolette fittings and locking furniture on all opening windows irrespective of configuration; and
20. child locks, where the windows are on or above the first floor level.

084 Ensure door and window furniture is SAA or brass finished as approved by the Client's Representative or as specified on the Order.

085 Use only PVC-u windows/doors approved by the Client's Representative unless specified on the Order.

Sealant

086 For pointing around window and door frames use sealants:
1) to applicable Standard with fungicide;
2) coloured to match existing; and
3) that are suitable for sealing to timber, aluminium and PVC-u windows and doors, as applicable.

087 Silicone sealant to applicable Standard with fungicide.

088 Repointing existing door and window frames with silicone sealant is to be undertaken by cutting away the existing mastic pointing with a sharp knife, cutting away any existing sand/cement pointing, ensuring that the surfaces to be jointed are completely dry and clean, the depth of sealant is to fill all resulting voids.

Combustion air grilles

089 When repairing or renewing items which incorporate combustion air grilles:
- use either the salvaged air grille (if it is in sound condition) or combustion air grilles as approved by the Client's Representative; and
- ensure apertures are maintained in the repair or renewed items.

Fibre cement insulating board

090 Use insulating board that is asbestos free and has a sanded finish.

Boards and panels

091 Do not use cross joints in board coverings.

PVC-u fascias/soffits/cladding and components

092 Ensure PVC-u fascias, soffits, cladding and components are:
- cellular PVC-u with a low density (closed cell) core and homogeneous skin;
- with self coloured, smooth, semi-matt finish;
- of sections and profiles approved by the Client's Representative.

Architraves, reveal linings, window boards and mouldings

093 Ensure replacement items match the existing (which may be of varying profiles and shapes). Where painted softwood skirtings and architraves are specified, at the Provider's option use an approved MDF equivalent where approved by the Client's Representative.

094 PVC-u cill board is to be bull nosed or square edged, manufactured from low density cellular (closed cell) core and homogeneous impact resistant skin of PVC-u in accordance with to applicable Standard UV stability and UV aged impact, resistance requirements.

095 Cill board to be maximum 155mm wide and minimum 9mm thick.
- Weight: Average density 500 kg/m3.
- Tolerance deviations of: +/-12.5% per m, width +/- 1.5mm, thickness +/- 0.5mm.
- Flatness: Must not exceed +/- 0.6mm over 100mm. Linear thermal expansion of less than 7mm x 10.5 dgs. C.
- Tested in accordance with applicable Standard Method 13. Fire Resistance:
- Satisfy the requirements of applicable Standard Class 1 Surface spread of flame and Index 1 = 15.4 Fire propagation. Colour Fastness: In accordance with to applicable Standard.
- Water Absorption: Less than 1.0% when tested in accordance with applicable Standard.
- Appearance: Self-coloured smooth gloss finish.
- Method of Fixing: As specified by manufacturer.
- Generally proprietary brand of adhesive or low modulus silicon.
- Edge Trims: Matching colour.
- Edge Trims: Single part PVC-u trims as per manufacturers details and fixed in accordance with manufacturers' technical data sheet.

Polythene vapour barrier

096 For a polythene vapour barrier use a type of sheet approved by the Client's Representative and fixed with all joints lapped and made with double folds and taped.

Ironmongery

097 Carefully wrap and protect ironmongery until completion of the Works. Either replace with new or re-lacquer any defaced or damaged ironmongery as Instructed by the Client's Representative.

098 Use screws conforming to the applicable Standard, and of a suitable gauge and Material for the purpose and to match the article to be fixed.

099 Lubricate locks, etc., with graphite and leave them in perfect working order on completion of the Works. Properly label and deliver up all keys to or as Instructed by the Client's Representative.

100 Use black japanned tee hinges and Suffolk latches.

101 Ensure that letter plates comply with the Royal Mail's minimum size standards in accordance with to applicable Standard. Ensure letter plates provided in fire doors conform to the fire rating of the door.

102 Unless the Order states otherwise provide all ironmongery to new, renewed or replacement timber doors in accordance with the following:

for external front doors:
- 1½ pairs 100mm heavy duty satin stainless steel butt hinges to applicable Standard (to be fire rated if for fire doors);
- 1 No. cylinder security night latch with latch pull, with deadlocking arrangements;
- 1 No. 65 or 75mm 5-lever mortice deadlock and keep;
- 1 set escutcheons;
- or multipoint locking system
- 1 No. letter plate - gravity type to applicable Standard; (fire rated for fire doors)
- 1 No. security door chain;
- stormproof sill/threshold with integral weather seals;
- rain deflector/weatherboard;
- intumescent seals (fire doors only); and
- door numerals;

for external rear doors:
- 1½ pairs 100mm heavy duty satin stainless steel butt hinges to applicable Standard; (to be fire rated if for fire doors);
- 1 No. 100mm 5-lever mortice lock/latch and keep;
- 1 set lever furniture/handles;
- or multipoint locking system;
- 2 No. mortice security bolts;
- stormproof sill/threshold with integral weather seals;
- rain deflector/weatherboard; and
- Intumescent seals (fire doors only);

for internal doors:
- 1 pair 75mm medium duty mild steel with fixed pin (non removable) butt hinges (1½ pair fire rated heavy duty satin stainless steel hinges to applicable Standard for fire-check doors);
- 1 No. 65 or 75mm tubular mortice latch and keep;
- 1 set lever furniture/handles; and
- intumescent seals (fire doors only);

for bathroom/wc doors:

- 1 pair 75mm medium duty mild steel with fixed pin (non removable) butt hinges (1½ pair fire rated heavy duty satin stainless steel hinges to applicable Standard to communal W.C's and bathrooms opening onto a means of escape);
- 1 No. 65 or 75mm mortice bathroom lock/latch and keep with reversible solid brass latch bolt to applicable Standard;
- 1 set lever bathroom furniture/handles with snib/indicator, deadbolt operated by turn button with emergency release;
- intumescent seals (fire doors only); and

for external match-boarded doors:

- 1 pair 457mm steel tee hinges;
- 1 No. rim lock and keep; and
- 1 set knob furniture.

103 Ensure that all door hinges, ironmongery and other hardware has a minimum fire rating to match the door, frame or door set on which it is used.

104 Ensure all door furniture is SAA or brass finished as approved by the Client's Representative or as specified on the Order.

Kitchen units/worktops in Repairs

105 Ensure kitchen units are manufactured to meet strength specification level 'H' and have fully repairable carcassing.

106 Ensure worktops are manufactured using laminated moisture resistant chipboard core and are consistent with existing worktops. Ensure all post-formed worktops are constructed using particleboard with minimum 'P5' classification (but if 'P5' is not obtainable construct only square edge and double post-formed worktops using particleboard with minimum 'P3' classification).

107 Ensure metal fittings and screws conforming to the applicable Standard, used in manufacture are plated against corrosion. Use metal corner gussets as fixing posts.

108 Take all necessary precautions to protect units and worktops from damage. Either make good any damage caused or replace Materials as Instructed by the Client's Representative. Ensure that, when fitted, all doors and drawers operate smoothly.

109 Where existing fixing holes cannot be used for hinges, use a steel cabinet strengthening plate, fixed four times to the unit and hinges fixed with self- tapping screws to the plate.

Chrome supporting leg

110 Ensure the worktop supporting leg is 30mm in diameter chrome plated and fixed to the worktop and floor with retaining plates and screws.

111 Aluminium square edge worktop end trim to applicable Standard, fixing with aluminium screws; bedding in silicone sealant.

112 Aluminium insert junctions to applicable Standard, bedding in silicone sealant.

113 Aluminium and rubber clip on cover beads to standard and quality approved by the Client's Representative, fixing with aluminium screws.

114 Chrome cover fillets of an approved type and manufacture, bedding and twice pointing in silicone sealant.

Handrails etc.,

115 Handrail brackets are to be cast aluminium or mild steel and fixed securely to timber with appropriate screws, finish: as specified.

116 Fixing brackets are to be galvanised steel to comply with applicable Standard, fixed securely to timber frame with three 30mm x 1½ mm galvanised screws.

117 Newel brackets are to be galvanised steel, fixed securely with bolts

118 Aluminium angle bearers are to comply with applicable Standard, 6063tf standard, anodised finish to applicable Standard, fixed securely to floor with galvanised steel screws.

WORKMANSHIP

Generally

119 Ensure carpentry work is framed and put together in a substantial and workmanlike manner.

120 Ensure joinery work is accurately set out, framed and executed in accordance with manufacturer's drawings and finished off in a workmanlike manner.

121 Put together purpose made doors and other framed work immediately upon the general work being commenced, but do not glue and wedge them until the joinery is prepared in readiness for immediate fixing.

122 Finish off machine planning and moulding smooth by hand.

123 Ensure exposed faces of joinery are wrought and all arises slightly rounded.

124 Punch and putty nails and pins in exposed work.

Plugging

125 Note that in this Section 'plug', 'plugged' or 'plugging':
- means fix to concrete, brickwork or blockwork and similar surfaces;
- includes supplying and fixing with proprietary fixings; and
- includes shot fired fixing.

126 For bolted joints, locate holes accurately and drill to diameters as close as practical to the nominal bolt diameter and not more than 2 mm larger, place washers under all bolt heads and nuts which bear directly on timber, - tighten bolts so that washers just bite the surface of the timber and at least one complete thread protrudes from the nut. Check at agreed regular intervals up to practical completion and tighten as necessary to prevent slackening of joints.

127 Ensure that wall plates are positioned and aligned to give the correct span and level for trusses, joists, etc. Wall plate to be fully bedded in fresh mortar in lengths of not less than 3 m with half lap joints. Wall plates shall be treated in accordance with Clause 015.

128 Installing joists generally, position at equal centres not exceeding designed spacing and true to level. Install bowed joists with positive camber. Bed hangers directly on and hard against supporting construction, do not use packs or bed on mortar. Cut joists to leave not more than 6 mm gap between ends of joists and back of hanger, rebate joists to lie flush with underside of hangers, fix joists to galvanised steel hangers with a nail in every hole, hanger size to suit joist, design load and crushing strength of supporting construction.

129 Trimming openings when not specified otherwise, trimmers and trimming joists to be not less than 25 mm wider than general joists.

130 When installing trussed rafters, carefully inspect each truss before erection to ensure compliance with shop drawings and specification, including grades and sizes of members, types, sizes and positions of nail plates, - gaps between ends of members at joints, and full penetration of nails.

- Erect trusses plumb, at equal centres not exceeding designed spacing and in accordance with applicable Standard

131 Do not use damaged trusses and do not modify without consent of the Client's Representative. Fix securely with truss clips ensuring that rafters do not bear on wall plates. Do not fix ceiling chords to internal walls until roofing is complete and cisterns installed and filled.

132 Permanent bracing of trussed rafters is to be set out as shown on drawings. Fix bracing and binders to every rafter, strut or tie with not less than two 75mm x 3.35 mm galvanized round wire nails. Any lap joints must be side by side extending over and nailed to at least two truss members. Where a binder crosses a brace, interrupt and plate the binder.

Repairs to Redwood Sills of Timber Windows

133 Cut out decayed timber and carry out repair using 'Dry Flex System' or other equal and approved. All in accordance with 'Window Care Systems' recommendations, approved method of working using correct tools. Maximum dimension of each resin repair as opposed to timber splice to be agreed with the Client's Representative prior to works commencing.

Repairs to Hardwood Sills of Timber Windows:

134 Cut out decayed timber and carry out repair using 'a proprietary timber repair system approved by the Client's Representative. All in accordance with 'Window Care Systems' recommendations, approved method of working using correct tools. Maximum dimension of each resin repair as opposed to timber splice to be agreed with the Client's Representative prior to works commencing.

Repairs to Timber Internal Door Frames:

135 Cut out decayed timber along the grain for a distance of 300mm (min) beyond the last visible sign of attack. The joint of new and existing timber shall be formed by means of 45° - 60° splice. New timber to be jointed to existing by means of galvanised screws or nails and adhesive and plugged and screwed to wall. New timber members shall match profile of existing. ''Dry Flex System'' or other equal and approved may be used as a viable alternative to new timber section. Maximum dimension of each resin repair as opposed to timber splice to be agreed with the Client's Representative prior to works commencing. Dispose of defective timber immediately.

Repairs to Timber External Door and Window Frames:

136 Cut out decayed timber along the grain for a distance of 300mm (min) beyond the last visible sign of attack. The joint of new and existing timber shall be formed by means of 45° - 60° splice. The new timber shall be redwood to applicable Standard Classes 2 and 3 or hardwood to applicable Standard, double vacuum treated in accordance with applicable Standard and all cut ends shall be dipped in similar preservative fluid before fixing in position. New timber to be jointed to existing by means of galvanised screws or nails and adhesive and plugged and screwed to wall. New timber members shall match profile of existing. ''Dry Flex System'' or other equal and approved may also be used as a viable alternative to new timber section. Maximum dimension of each resin repair as opposed to timber splice to be agreed with the Client's Representative prior to works commencing. Dispose of defective timber immediately.

Repairs to Hardwood Sills of Timber Windows:

137 Cut out decayed timber along the grain for a distance of 300mm (min) beyond the last visible sign of attack. The joint of new and existing timber shall be formed by means of 45° - 60° splice. The new timber shall be hardwood to applicable Standard, Class 1 and all cut ends shall be dipped in similar preservative fluid before fixing in position. New timber to be jointed to existing by means of galvanised screws or nails and plugged and screwed to wall. New timber members shall match profile of existing. ‘’Dry Flex System” or other equal and approved may be used as a viable alternative to new timber section. Maximum dimension of each resin repair as opposed to timber splice to be agreed with the Client’s Representative prior to works commencing. Dispose of defective timber immediately.

Replacing Structural Members:

138 Cut out decayed/infested timber along the grain for a distance of one metre beyond the last sign of attack. The joint of new and existing timber shall be formed by means of a half lapped joint at least twice the length of the member in depth; the new timbers should make-up the bottom section of the joint if timbers are horizontally placed. For the new timber, use a preservative treated whitewood from a source approved by the Client’s Representative. Existing timbers ends exposed by cutting/jointing must be treated with preservative. New timber shall be jointed to existing by means of bolts. Connection to be affected with at least 4 number 12.5mm diameter mild steel bolts with locking nuts and dog washers. New timber members shall match profile of existing. Dispose of defective timber immediately.

Replacing Preservative Treated Structural Members:

139 Cut out decayed/infested timber along the grain for a distance of one metre beyond the last sign of attack. The joint of new and existing timber shall be formed by means of a lapped joint at least twice the depth of the member in length. New timber shall be jointed to existing by means of galvanised bolts. Connection to be effected with at least 4 number 12.5mm diameter mild steel bolts with locking nuts and dog washers. New timber members shall match profile of existing. Dispose of defective timber immediately.

Replacing Treads and Risers:

140 Remove any plasterboard and trimmings as necessary to underside of staircase. Defective treads and risers to staircase are to be removed. Replacement whitewood treads and plywood risers to profile of previous to be housed into string. Wedges and blocks to be adhesive fixed in position. Internal Grade 1-1 plywood risers to be adhesive fixed and screwed to back of treads. All work to be executed from underside. Dispose of defective timber immediately.

Softwood flooring/board flooring

141 Renew floorboards carefully so as to avoid damaging the ceiling below the floor. Remove tongued and grooved boards by carefully sawing through the tongues and forming a heading joint adjacent to a joist. When replacing the boards, provide additional support at the heading joint using timber 50 x 25mm secured to the joist.

142 Where a number of floorboards require renewal, well cramp up the new boards to form tight joints and nail them up with two lost head nails punched and putted per board, per joint. Fix access traps with screws. Take care when fixing the floorboards not to puncture or damage any existing services.

143 Provide all additional support battens, noggins etc., required to support the boards.

Timber door frames and door linings

144 For new door frames and linings, use a minimum of three sets of fixings to each leg, each set comprising two fixings (either timber plugs and nails or proprietary plastic plugs and screws as appropriate to the quality of the fixing background). Where external door frames do not have timber cills, provide galvanised steel dowels in the legs, grouted into the building structure with cement mortar (1:3).

145 Fix existing door frames or linings which have become loose through the frame using proprietary sleeved screw fixing devices approved by the Client's Representative.

146 Sink the heads of fixings below the surface of the frame and the recess and fill them with an approved filler.

Softwood window frames

147 Fix softwood windows and softwood window surrounds in the same way as for fixing door frames and lining legs.

Metal window frames

148 Bed metal windows in a butyl rubber sealant and fix them to wood window surrounds which have been treated to applicable Standard with galvanised or cadmium plated screws or alternatively by stainless steel fixing clamps or brackets and proprietary plastic plugs and approved rust proof screws.

Window/door replacement

149 All replacement windows and doors in repairs and ad-hoc renewals are to be to applicable Standard. Undertake window/door replacements that involve removal of the primary frame from the building and associated glazing in accordance with the current Building Regulations, Approved Document L.

Fire rated doors/frames/door-sets – repair, replacement and installation

150 Ensure that the repair, replacement and/or installation of internal/external fire rated doors, door frames, door-sets and any associated components such as stops, architraves, thresholds, trims, seals, ironmongery and the like is undertaken only by persons that are properly accredited to do so by having been certified by BMtrada, or other approved equivalent organisation.

Sealant

151 Before pointing around existing window and door frames, pick out all loose materials and insert a cellular backing appropriate to the type of sealant in the joint between the frame and wall. Use a sealant as specified, inserted by pressure gun to form a neat uniform beaded finish.

Stud partitions

152 For stud partitions use suitably sized softwood head and sole plates with studs at 400mm centres horizontally and noggins at 1200mm centres vertically. Butt joint quilts and fill the entire void.

Kitchen units

153 All kitchen units in repairs and ad-hoc renewals are to be to applicable Standard. Fix base units with proprietary metal or plastic fixing brackets, plastic plugs and screws and the joint between the worktop and wall pointed with a neat bead of anti-mould white silicone sealant.

154 Fix wall units with proprietary metal or plastic fixing brackets, plastic plugs and screws and also support them on full length softwood cleats of not less than 50 x 25mm.

Worktops

155 All worktops in repairs and ad-hoc renewals are to be to applicable Standard. Fix worktops to base units on metal or plastic brackets with self-tapping screws. Support worktops with a void under by 50 x 25mm softwood cleats securely fixed to any background on at least three sides. If this cannot be achieved, support the sides affected on a flanged tubular steel support fixed to the floor with proprietary plastic plugs and screws and to the worktop with appropriate self-tapping screws. Seal/treat all cut edges to prevent the ingress of moisture, square cut with matching veneer to exposed ends.

Fixing PVC-u doors and windows

156 PVC-u windows and doors in repairs and ad-hoc renewals are to be to applicable Standard and manufactured to applicable Standard. Take out the existing door/window and hack off render/plaster as far as necessary to accommodate the window fixing cramps in window reveals. Supply and install support lintels over the new window/door opening. Where the original brickwork is carried over the window/door i.e. soldier course, make good the brickwork as necessary. Remove all rubbish and leave the window/door opening ready to receive the new window/door. Lintels to be in accordance with current Building Regulations, Approved Document A.

157 Fix the PVC-u double glazed window/door with or without a cill directly into the prepared brick reveals using galvanised twist-in-lugs, approved by the Client's Representative, screwed to the reveals using galvanised screws. Seal the windows to the masonry openings with silicone sealant approved by the Client's Representative. Protect the windows during the course of the Works. Fix all windows directly to the inside face of the vertical DPC. Remove all old mastic from the brick face.

158 Where appropriate supply and fix an approved PVC-u cellular core window board, fixed with screw on lugs, fixed to the wall, together with 19mm PVC-u quadrant beading, glued to the window boards and window frame using an appropriate adhesive.

159 Make good to all internal window reveals with backing and finished plaster and leave ready for redecoration.

160 Replace the windows/doors that have been removed with new windows/doors and make them weather-tight before the Staff leave the Property at the end of each Working Day.

Fixings/Adhesives

161 Fixing generally: Use fixing and jointing methods and types, sizes, quantities and spacings of fastenings which are suitable having regard to nature of and compatibility with product/material being fixed and fixed to recommendations of manufacturers of fastenings and manufacturers of components, products or materials being fixed and fixed to materials and loads to be supported. Provide additional noggings/grounds/bearers as necessary to provide adequate fixing and support.

162 Adhesive types: As specified in the relevant section. Surfaces to receive adhesive to be sound, unfrozen, free from dust, grease and any other contamination likely to affect bond. Where necessary, clean surfaces using methods and materials recommended by adhesive manufacturer.

163 Ensure surfaces to be of sufficient smoothness and evenness to suit gap filling and bonding characteristics of adhesive. Adjust as necessary, ensure that operatives observe manufacturer's and statutory requirements for storage and safe usage of adhesives. Do not use adhesives in unsuitable environmental conditions or beyond the manufacturer's recommended time period. Apply adhesives using recommended spreaders/applicators to ensure correct coverage. Bring surfaces together within recommended time period and apply pressure evenly over full area of contact surfaces to ensure full bonding. Remove surplus adhesive using methods and materials recommended by adhesive manufacturer and without damage to affected surfaces.

164 Fixing Through Finishes: ensure that fastenings and plugs (if used) have ample penetration into the backing.

165 Pelleting: Countersink screw heads 6 mm below timber surface and glue in grain-matched pellets not less than 6 mm thick, cut from matching timber. Finish off flush with face.

Expanding Polyurethane Foam

166 Expanding polyurethane foam must be of an approved fire resistant type complying with applicable Standard and be of the correct fire performance rating for its intended use or application to ensure Building Regulations compliance.

Sun Pipes

167 Proprietary Rigid Sun Pipe to Pitched Roof

Generally will supplied and installed to the following specification:
- Pipe material: Rigid aluminium.
- Diameter: 240 – 360 mm
- Tunnel length: Up to 6 m maximum.
- Tunnel reflectance: Greater than 97%.
- Roof terminal: Proprietary polycarbonate dome (opal / UV protected) or 4 mm toughened glass in polyurethane frame.
- Ceiling terminal: Double glazed diffuser.
- Accessories: 30° – 45° proprietary bends as required. (Total number of bends to be kept to a minimum).
- Proprietary extension sections as required.
- Flashing: To suit interlocking concrete roof tiling.
- Installation: In accordance with manufacturers' technical data sheet

168 Proprietary Flexible Sun Pipe to Pitched Roof

Generally will supplied and installed to the following specification:
- Pipe material: Flexible metallized polyester.
- Diameter: 350 – 360 mm
- Tunnel length: Up to 1.5 m maximum.
- Roof terminal: Polycarbonate dome (opal / UV protected).
- Ceiling terminal: Double glazed diffuser.
- Flashing: To suit interlocking concrete roof tiling.
- Installation: In accordance with manufacturers' technical data sheet.

169 Proprietary Rigid Sun Pipe to Flat Roof

Generally will supplied and installed to the following specification:
- Pipe material: Rigid aluminium.
- Diameter: 240 – 360 mm
- Tunnel length: Up to 6 m maximum.
- Tunnel reflectance: Greater than 97%.
- Roof terminal: Proprietary polycarbonate dome (opal / UV protected).
- Ceiling terminal: Double glazed diffuser.
- Accessories: 30° – 45° proprietary bends as required. (Total number of bends to be kept to a minimum).
- Proprietary extension sections as required.
- Flashing: To suit flat roof construction.
- Installation: In accordance with manufacturers' technical data sheet.

170 Proprietary Flexible Sun Pipe to Flat Roof

Generally will supplied and installed to the following specification:

- Pipe material: Flexible metallized polyester.
- Diameter: 350 – 360 mm
- Tunnel length: Up to 0.9 m maximum.
- Roof terminal: Proprietary polycarbonate dome (opal / UV protected).
- Ceiling terminal: Double glazed diffuser.
- Flashing: To suit flat roof construction.
- Installation: In accordance with manufacturers' technical data sheet

Servicing of Timber Window Frames

171 **General servicing requirements for timber window frames**

The degree of servicing required to timber window frames will be decided by the Client's Representative. The servicing should fall into one or other of the following categories.

172 **Condition of the frame and sash**

- The simplest form of servicing would be to ease and adjust the opening sash.
- Severely damaged opening sashes should be replaced as original.
- The fixed frame presents greater problems to repair but 'Window Care Dry Flex System' should be considered as a viable alternative to replacement.
- On completion the bare timber must be coated as original.

173 **Conditions of surface coating**

- Touching up is generally discouraged as weather conditions have an adverse effect on all surface coatings.
- The preferred option is to re-coat all window surfaces as original with light sanding between each coat.

174 **Condition of ironmongery**

- Damaged ironmongery should be replaced with matching or product similar to existing ironmongery and fitted as per manufacturer's technical data sheet
- Back flap or cranked hinges seldom require servicing, however service with light oiling with release oil/lubricant spray
- Friction hinges require light oiling with release oil/lubricant spray during servicing
- Replace all defective hinges as recommended by manufacture.
- Loose casement stays and handles should be re-fixed either by using longer screws or reuse the original screws by plugging the original screw hole.
- Tilt/turn and fully reversible gearing systems should be serviced by a qualified service engineer.
- Trickle vents should be cleaned of all paint, dirt, dust etc. and left in an operational state. Replace parts as necessary.
- Condensation holes/channels were present should be cleaned of all paint, dirt, dust etc. and left in an operational state.
- All existing safety restrictors to be checked for correct operation. Where correct operation is not being achieved, adjustments should be made. If adjustments do not prove adequate replace the restrictor. On finishing the dwelling/property, all opening sashes are to be fitted with a safety restrictor. Each dwelling should be fitted with similar restrictors throughout – thus removing possible confusion in the event of a fire.

175 **Condition of glass and glazing**

- All damaged glass should be carefully removed before the removal of glazing slips or facing putty.
- Cracked glass should be taped to prevent accidents.
- When all glass is removed the rebates should be cleaned and primed with the appropriate primer before re-glazing.
- When slip glazing is used the bottom slip must be bedded in 'Dry Seal Elastic
- Glazing Sealant' to prevent ingress of water.
- Linseed oil putty must NOT be used.

176 **Glazing medium**

'Elastic Glazing Sealant' is the only option for face pointing. Linseed oil putty must NOT be used.

177 **Draught Proofing**

Draught proofing to existing window frames can usually be effected by using one of five different methods:

- Appropriately sized extruded foam with one side self adhesive; this if fitted to the frame rebate/inside face of sash.
- A co-extruded flexible seal with the rigid section nailed to the sash and the flap touching the sash. This component may have a metal rigid section.
- A bulbous extruded seal, again with the flat section nailed to the inside rebate of the frame and the bulbous section touching the sash.
- Replacement nerprim seals (if fitted) to match existing profile and colour.
- Silicon sealing. This method of draught proofing should be avoided and only undertaken after written advice and clarification is received from Policy and Standards.

In all cases some slight difficulty may be experienced when closing the sash and generally adjustment of ironmongery may be necessary.

Servicing of PVC-u Window Frames

General servicing requirements for PVC-U window frames

178 Ventilation and drainage:

All:

- Trickle vents (either in-frame, in-glazing or other)
- Condensation holes/channels (were present)

should be cleaned of all paint, dirt, dust etc. and left in an operational state. Replace parts as necessary.

179 Seals and gaskets:

- Check neoprene seals and gaskets for wear/failure and replace seals/gaskets as necessary. Replacement seals to match existing profile and colour.
- Clean of all paint, dirt, dust etc. from seals/gaskets and apply a spray coat of silicate lubricant (remove access lubricant).

180 Ironmongery:

- Damaged ironmongery should be replaced with matching or product similar to existing ironmongery and fitted as per manufactures instructions.

181 Hinges:

Hinges should be cleaned of all paint, dirt, dust etc. and left in an operational state. Hinge oil/lubricant is to be applied and hinge restraint screws adjusted accordingly. Replace parts as necessary.

182 Safety restrictors:

All existing safety restrictors to be checked for correct operation. Where correct operation is not being achieved, adjustments should be made. If adjustments do not prove adequate replace the restrictor.

183 On finishing the Property, all opening sashes are to be fitted with a safety restrictor. Each Property should be fitted with similar restrictors throughout – thus removing possible confusion in the event of a fire.

Cleaning PVC-u window frames

184 Sash frames and window frames are to be fully cleaned of all paint, dirt, dust etc. and left in an operational state.

185 Dirty marks on frames can be easily removed by using cleaning materials as indicated on the following table.

186 Cleaning cloths should be unbleached cotton. Do not use cloths containing synthetic fibres.

187 Heavy stains and deep scratching can be removed from white profiles only by sanding with a 320/400 grit sanding disc and by polishing using a sisal rotary brush to restore surface finish.

188 On wood grain surfaces care must be taken when cleaning. Seek manufacturer's advice on damaged wood grain surfaces.

Condition of glass and glazing

189 Check condition of glass;
- All damaged glass should be carefully removed before the removal of glazing slips.
- Cracked glass should be taped to prevent accidents.
- When all glass is removed the rebates should be cleaned

Typical problems and remedial action

190 Incorrect glazing and fixing of frames to masonry are the cause of most maintenance problems.

The following is an indication of typical problems and remedial action.

191 Opening sashes that have dropped during use:

- Check hinges for wear/adjustment remove wedge gaskets.
- Remove glazing beads internal or external.
- Repack glass to manufacturers recommendations.
- Refit glazing slips and gaskets.

192 Bowed cills/stiles:

- Incorrect packing generally the case.
- Re-glaze as Clause 175 and secure packers to prevent further movement.
- Taking care not to block drainage/air circulation channels and/or slots.

193 Sashes not sealing properly or engaging keepers:

- Check adjustment hinges and keepers.
- Check that the glass is packed at locking points, if not packed carry out work as manufacturer's technical data sheet.
- Check also that the glass is packed at the position of frame fixings.
- Check gaskets for wear/failure.

194 Broken/cracked glass:

- Remove if possible pieces of broken glass before removing glazing beads.
- Cracked glass should be taped to avoid accidents, before removing gaskets or glazing beads. Remove gaskets, remove glazing beads.
- Carefully remove damaged unit or sheet glass.
- Replace and re-glaze as per manufacturer's instruction, taking care to fit packers as recommended.

195 Opening sash adjustment.

All necessary adjustment should be completed after glazing. All hinges should be lightly oiled at periodic intervals. If glazing is completed as per manufacturer's instruction, little or no adjustment will be necessary. However, should adjustment be necessary the following steps should be taken:-

- Check margin of sash to frame.
- Remove centre screw on friction arm.
- Release two outer screws and then reposition the sash.
- Check that the overlap sash to frame is sufficient (5 mm min).
- Retighten the outer screws; replace the centre screw to ensure no further movement of the sash. The friction on the friction stay can be adjusted using the screw on the friction stay fixed member.
- Where adjustable espagnolettes have been fitted the rollers can be adjusted to gain compression of the weather gasket with the use of an Allen key by turning the rollers about their eccentric cams.

196 Should problems still exist when the sash is closed and the overlap to frame is equal refer to the below table for possible cause.

Upgrading

197 When upgrading from single to double glazing units, consider the strength of the existing hinges with regard to the additional weight of the double glazed unit and replace if required.

198 NOTE: It is recommended that all servicing work is carried out by a specialist service engineer

CHECK LIST A

PROBLEM	CAUSE	ACTION
Sash hits keeper	- Frame bowed opening to rear	Re-glaze Reposition hinge
Cam hits striker	- Striker in wrong place	Reposition
Handle operation stiff	- Cams not adjusted - Keepers out of line	- Adjust cam - Realign and oil
Draughts	- Bowing members	- Re-glaze - Fit cavity block
	- Overlap incorrect - Both overlaps incorrect	- Reposition - Remake sash
	- Gasket problem	- Repair or replace
Sash moves too easily	Friction screw set incorrectly	Tighten Friction screw
Sash binding	Friction screw set incorrectly Outer frame bowed	Loosen friction screw Repack outer frame

CHECK LIST B

COMTAMINATION	CLEANING METHOD			
	Scrape off and Polish with Dry Cloth	**Clean with water and mild detergent**	**Clean Off with non-abrasive detergent and water**	**Manufacturers specified cleaning agent**
Bitumen			✓	
Pencil		✓		
Emulsion Paint	✓			
Felt Pen		✓		
Inorganic Grease			✓	
Plaster	✓			
Wood stain		✓		
Ball Pen		✓		
Cellulose Paint				✓
Rust				✓
Soot			✓	
Cement Mortar	✓			
Wax Pen			✓	

199 Manufacturers specified cleaning agents should only be used by authorised service providers and with extreme care.

Loft Insulation

200 Mineral Fibre Loft Insulation laid between ceiling ties/joist or over existing quilt shall comprise:

- Mineral fibre insulation to applicable Standard, manufactured in accordance with applicable Standard as certified under BSI kite marked or other certification scheme acceptable to the Client's Representative;
- Installed in accordance with all the provisions of applicable Standard. The Provider should pay particular attention of the applicable Standard provisions for ventilation to roof space and; avoidance of overheating of electric cables.
- Thermal conductivity of insulation no more than 0.040 W/mK;
- Debris to be removed and any sealing of holes for pipes, lighting drops etc., completed before the installation of the insulation; Insulation to be fitted tightly with closely butted joints, leaving no gaps and extending over wall plates;
- Ensure that eaves ventilation is unobstructed and electric cables are not covered;
- Do not lay insulation directly below water cistern platform(s) – platforms should be elevated above ceiling joist/trusses
- Lay insulation in two layers where necessary;
- Install 800mm long plastic spacers to maintain a continuous 25mm minimum airspace above the insulation at the eaves. These are to be secured by tacked to rafters at both sides with galvanised thick staples or tacks, projecting 100mm (measured horizontally) beyond the wallplates. Insulation should cover the wallplates but shall not to project beyond the end of the spacer (described above)

201 Glass Fibre Loft Insulation laid between ceiling ties/joist or over existing quilt shall comprise:

- Glass fibre insulation to applicable Standard, manufactured in accordance with applicable Standard as certified under BSI kite marked or other certification scheme acceptable to the Client's Representative;
- Installed in accordance with all the provisions of applicable Standard. The Provider should pay particular attention of the applicable Standard's provisions for ventilation to roof space and; avoidance of overheating of electric cables.
- Thermal conductivity of insulation no more than 0.040 W/mK;
- Debris to be removed and any sealing of holes for pipes, lighting drops etc., completed before the installation of the insulation; Insulation to be fitted tightly with closely butted joints, leaving no gaps and extending over wall plates;
- Ensure that eaves ventilation is unobstructed and electric cables are not covered;
- Do not lay insulation directly below water cistern platform(s) – platforms should be elevated above ceiling joist/trusses
- Lay insulation in two layers where necessary;
- Install 800mm long plastic spacers to maintain a continuous 25mm minimum airspace above the insulation at the eaves. These are to be secured by tacked to rafters at both sides with galvanised thick staples or tacks, projecting 100mm (measured horizontally) beyond the wallplates. Insulation should cover the wallplates but shall not to project beyond the end of the spacer (described above)

202 Loose mineral fibre loft insulation suitable for blowing only to applicable Standard, used to manually fill gaps;

203 Insulated loft access boards shall be supplied and installed as additional loft access boards for inspection/access situated above walls where possible. Boards to be 1210mmx 475mm (minimum) x 18mm OSB Structural/Flooring grade bonded to 70mm high density insulation, strength 150 kPa at 10% compression, conductivity less than 0.041 W/mK fixed with 4 no long galvanised screws at least 20mm into ceiling joists. Generally allow 2 boards per dwelling. Leave existing loft boards in position, insulating underneath where possible.

204 Loft Hatch /Door Insulation and Sealing shall comprise:

- Mineral fibre loft access hatch insulation to applicable Standard, conductivity less than 0.04W/mK, 200mm thick compressed to 120mm minimum held in place with woven fibreglass fabric and galvanised staples fixed to hatch lid frame, area 0.50m^2 nominal area, provide and install an easily compressible rubber self-adhesive 'P' seal fixed onto the timber hatch surround, refit or provide a hook and eye to prevent uplift;

- Mineral fibre loft access door insulation to applicable Standard, conductivity less than 0.04W/mK, 200mm thick compressed to 120mm minimum held in place with woven fibreglass fabric and galvanised staples fixed to door frame, area 0.70m^2 nominal area, provide and install an easily compressible rubber self-adhesive 'P' seal fixed onto the timber door surround, where necessary nail a 25mm x 38mm PAR softwood batten at 300mm centres round the door to provide a background for the compressible seal 3.4m maximum, refit or provide a small bright finish bolt to compress seal;

- Phenolic foam loft access hatch insulation to applicable Standard, conductivity less than 0.023W/mK, 100mm thick, strength more than150kPa at 10% compression fixed to hatch lid frame, area 0.50m^2 nominal area, if the hatch is of combustible material nail 12mm plasterboard over before gluing insulation board over, provide and install an easily compressible rubber self-adhesive 'P' seal fixed onto the timber hatch surround, refit or provide a hook and eye to prevent uplift;

- Phenolic foam loft access door insulation to applicable Standard, conductivity less than 0.023W/mK, 100mm thick, strength more than150kPa at 10% compression fixed to hatch lid frame, area 0.70m^2 nominal area, if the hatch is of combustible material nail 12mm plasterboard over before gluing insulation board over, provide and install an easily compressible rubber self-adhesive 'P' seal fixed onto the timber hatch surround, where necessary nail a 25mm x 38mm PAR softwood batten at 300mm centres round the door to provide a background for the compressible seal 3.4m maximum, refit or provide a small bright finish bolt to compress seal;

206 Proprietary white factory finished polypropylene insulated drop-down hinged loft access hatch to minimum opening width of 520mm, with insulation having a maximum U value of 0.25W/mK with integral draught and vapour seal in accordance with applicable Standard, and secure catch to resist wind uplift, installed in accordance with the manufacturer's technical data sheet.

Insulation Boards

207 Insulation boards shall comprise:

- Expanded white polystyrene board to applicable Standard, material to have BBA certification or equivalent, conductivity 0.035W/mK or less than, strength more than 100kPa at 10% compression, neatly cut and fit with no gaps and temporarily support in position where necessary, cut into insulation where this is needed to allow it to bend and rest directly on substrata;

- Expanded grey polystyrene board to applicable Standard, material to have BBA certification or equivalent, conductivity 0.031W/mK or less than, strength more than 100kPa at 10% compression, neatly cut and fit with no gaps and temporarily support in position where necessary, cut into insulation where this is needed to allow it to bend and rest directly on substrata;

- Foil faced polyurethane/PIR foam board to applicable Standard, material to have BBA certification or equivalent, conductivity 0.023 W/mK or less than, strength more than 100kPa at 10% compression, neatly cut and fit with no gaps and temporarily support in position where necessary, cut into insulation where this is needed to allow it to bend and rest directly on substrata;

- Closed cell extruded polystyrene insulation board to applicable Standard, material to have BBA certification or equivalent, conductivity 0.035W/mK or less than, strength more than 100kPa at 10% compression, neatly cut and fit with no gaps and temporarily support in position where necessary, cut into insulation where this is needed to allow it to bend and rest directly on substrata. Where fixed to external walls underground, use suitable adhesive paste to fix, using lines of paste at edges and to form closed shapes no more than 250mm wide/tall, applying pressure until the adhesive sets. Finish the exposed upper edge and its junction with the wall with paste. Use 2 no additional stainless steel screws and 20mm washers and plug fixings per m^2 to prevent uplift with any later failure of the adhesive;

- Foam glass rigid closed cell insulation board to applicable Standard, material to have BBA certification or equivalent, conductivity 0.041W/mK or less than, strength more than 400 kPa to EN826 Annex A. Where fixed to external walls underground, use suitable adhesive paste to fix, using lines of paste at edges and to form closed shapes no more than 250mm wide/tall, applying pressure until the adhesive sets. Finish the exposed upper edge and its junction with the wall with paste. Use 2 no additional stainless steel screws and 20mm washers and plug fixings per m^2 to prevent uplift with any later failure of the adhesive;

- Foil faced Phenolic foam rigid sheet insulation board to applicable Standard, material to have BBA certification or equivalent, conductivity 0.023W/mK or less than, strength more than 120kPA at 10% compression, neatly cut and fit with no gaps and temporarily support in position where necessary.

- Expanded Polystyrene insulation board fixed to studs to applicable Standard, material to have BBA certification or equivalent, conductivity 0.032W/mK or less than, strength more than 100kPa at 10% compression, cut and fit neatly with tongue uppermost, leaving no gaps, fix sheets to each support at no more than 600mm centres with 12mm diameter flat head galvanised nails at least 12mm longer than thickness of insulation;

- Foil Faced polyurethane/PIR foam insulation board fixed to studs to applicable Standard faced with plasterboard, material to have BBA certification or equivalent, conductivity 0.023W/mK or less than, strength more than 120 kPa at 10% compression, cut and fit neatly leaving no gaps, fix sheets to each support at no more than 400mm centres with flat head galvanised nails at least 12mm longer than thickness of insulation, fit additional plasterboard so as not to leave vertical faces of insulation board exposed;

- Foil faced rigid sheet polyurethane/PIR foam cavity wall insulation board to applicable Standard, conductivity 0.023W/mK or less than, strength more than 120 kPa at 10% compression, neatly cut and fit with no gaps and temporarily support in position where necessary, install in compliance with any relevant BBA certificate or equivalent quality system approved by the Client's Representatives;

- Mineral fibre vertical insulation mats to applicable Standard, manufactured under applicable Standard as certified under BSI kite marked or other certification scheme acceptable to the Client's Representative, to vertical studding in un-floored loft areas, complete with galvanised mild steel 50mm mesh x 19swg gauge and used from 600mm rolls, 100mm mineral fibre insulation secured behind galvanised light wire mesh tied back to studs every 400mm horizontally and vertically, fixed with 2mm x20mm galvanised mild steel staples to applicable Standard at 400mm maximum centres, all installed in accordance with applicable Standard;

- Mineral fibre vertical insulation mats with integral metal mesh facing to applicable Standard, manufactured under applicable Standard as certified under BSI kite marked or other certification scheme acceptable to the Client's Representative, to vertical studding in un-floored loft areas, tied back to studs every 400mm horizontally and vertically, fixed with 2mm x20mm galvanised mild steel staples to applicable Standard at 400mm maximum centres, all installed in accordance with applicable Standard;

- 50mm Foil faced Phenolic foam rigid sheet insulation board to applicable Standard, material to have BBA certification or equivalent, conductivity 0.023 W/mK or less than, strength more than 120kPa at 10% compression, to vertical studding in un-floored loft areas, nailed in position over studs;

- 25mm Minimum mineral wool insulation with aluminium foil outer layer, maximum thermal conductivity of 0.04W/mK, wrapped around ductwork in unheated roof-space, taped securely in accordance with manufacturer's technical data sheet;

Thermal and Sound Insulation Quilts

208 Thermal Insulation quilts shall comprise:

- Mineral fibre thermal insulation mat quilt to applicable Standard, conductivity less than 0.040W/mK, compression fit, no gaps fixed between timber studs;

- Semi-rigid mineral fibre batts to applicable Standard, conductivity less than 0.040W/mK, compression fit, no gaps fixed between metal studs;

209 Sound insulation quilts shall comprise:

- 25mm minimum mineral fibre sound absorbing quilt , no facing, minimum density 10kg/m3, fixed to one side of partition, joints butted, gaps < 5mm, securely fixed in place, can be glued or wire reinforced for fixing, head fixing to with galvanised large staples or large headed nails;

Client's current manufacturers/suppliers/products

210 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	**Brand name**	**Manufacturer's details**
Six Panel Flush Internal door	Jeldwen Bostonian	Medium weight semi core type
Lever Handles	Eurospec CSL1191SSS	Straight Lever Handles and 62mm Latch
Butt Hinges	Eurospec	75mm

[complete table as appropriate]

REPLACEMENT EXTERNAL, COMMUNAL AND FIRE DOORS

REPLACEMENT EXTERNAL DOORS - SURVEYING AND INSTALLATION [TOP TIER]

M3NHF SCHEDULE OF RATES – RESPONSIVE MAINTENANCE & VOID PROPERTY WORKS – SPECIFICATION – VERSION 8

REPLACEMENT EXERNAL DOORS – SURVEYING AND INSTALLATION

General

001 It should be noted that in order to reduce possible errors/confusion due to conflicting repeat clauses etc. the Replacement External Door specification sections have been sub divided into tiers as per the table below;

Top tier	Middle Tier	Lower Tier
Replacement external doors – surveying and installation etc.	Replacement External, Communal and Flat Entrance Doors – General	GRP External Door sets and Screens
		Fire Door Sets
		Pre-finished Timber External Door sets and Screens
		Aluminium External Doors and Screens
		Replacement Undecorated Timber External Door Sets and Screens

002 In this manner each completed product will be required to meet the specification of 3 No tier documents.

003 Example; if work to be undertaken is a GRP External Door, then the 3 No tier documents to be used will be;

- Replacement external doors – surveying and installation etc.
  - Replacement External Communal and Flat Entrance Doors – General
    - GRP External Door sets and Screens

Initial Survey

004 A list of Properties will be given to the Provider with access details and the Provider is then responsible for arranging access, visiting the Properties, taking measurements and forwarding existing external door dimensions and the Provider's proposed style of replacement door to the Client's Representative for approval.

005 External Doors - Whether the new doors are to be GRP, aluminium or timber replacements is dependent on the condition of any existing external door (if present) and therefore matching new proposals with the existing Property and surrounding Client owned Properties.

006 The drawings are to include 'sketch elevations' of each door showing the position of each proposed door type and to include details of glass type for each door.

007 The proposals are to be approved by the Client's Representative before the Provider commences manufacture.

Site Measurements

008 The Provider is responsible for ascertaining the correct dimensions and sizes of every existing external door in each Property.

009 The dimensions noted on any schedule issued by the Client's Representative are for guidance only and are approximate measurements. The Provider is responsible for taking all site sizes and measurements for each and every external door opening, and for manufacturing doors accordingly and to the applicable Standards. (Windows and doors - Code of practice for the survey and installation of windows and external door-sets) and as recommended in the GGF (Glass & Glazing Federation) "Good Practice Guide for the Installation of Replacement Windows and Doors".

010 This procedure requires a minimum of **8 No measurements** both internally and externally to determine the difference between internal and external reveal sizes. Therefore internal access to the Property must be gained before manufacturing the doors – this will also allow for full Customer consultation and agreement of intended Works. It is the Provider's sole responsibility to obtain the Customers approval to receive the Works before manufacturing is commenced.

011 External doors are in the main fitted from the outside, although the nature of some reveals will permit replacement doors to be fitted from the inside.

012 The measurement and fitting of doors must in every case respect the existing cover/rebate to the outer frame of the doors by virtue of any "reverse brick detail" or "check reveal" that may pertain to existing Client Property.

013 Where a check reveal is present for weathering purposes, the door manufacturing sizes should be based on achieving a minimum frame overlap of 12 mm on the external leaf. A hole may be drilled thorough the existing frame jamb rebate to establish the check reveal size. A frame may also be built into the check reveal at the head by use of a rebated lintel, and again a minimum frame overlap of 12 mm should be provided where practicable. If an overlap of 12 mm cannot be achieved, this should be discussed with the Client's Representative and an agreement reached regarding the size of the overlap for particular properties. As the Client owns a large stock of Properties, which vary in construction detailing, long term standard agreements to the amount of overlap will not be made with exception to the dimension stated here.

014 The Provider's attention is drawn to the fact that similar external doors in similar Property types may vary in size.

015 The Provider is responsible for ascertaining the correct dimensions and sizes of every existing external door in each Property. Measurements for each door (and its location) must be clearly identified on any delivery schedule and each door shall have a clear labelling system to reflect this.

016 The use of make-up pieces (clip-on's) will not normally be permitted except with the express **written** authority of the Client's Representative. Written authority does not transfer to the entire Contract, if gained; it must be acquired for individual Property and/or phases.

017 Any existing external door opening which will present the Provider with a problem in compliance with the Specification, or in manufacture of a door to suit, must be brought to the attention of the Client's Representative before the door is fabricated. The Client's Representative will issue a written Instruction informing the Provider of what action is to be taken.

018 Obtain signed consent from the Customer before manufacture of any external door is undertaken. The Provider should be aware payment will only be made on completion of the door being installed into the Property.

Guarantees

019 In addition to the Client's rights under the Contract, the Provider is to provide the minimum guarantee tabled below against manufacturing defects etc., on all new GRP, aluminium and timber external doors upon completion of the Works. The guarantee is to include for all profiles, joinery, and for the double glazed units.

020 Manufacturers guarantees in all instances are to be for the years stated below with no exceptions attached (i.e. end user servicing expectations etc.), this will assure the Client that the manufacturer is confident of their own products durability.

PVC-u profiles	25 Years
Timber frames	30 Years guarantee against fungal attack
Timber Door Manufacturing Defects	10 year guarantee
Timber Door (Factory Painted External Joinery)	10 Year guarantee (as minimum)
Timber Door (Factory Stained External Joinery)	6 Year guarantee (as minimum)
Hardware Components	10 Years (minimum)
Double Glazed Units	15Years (minimum)

021 Doors are to be manufactured under guidelines ISO 14001 (Environmental Management) and ISO 9001 (Quality Management Systems) with manufacturing companies holding the relevant accreditation. Manufacturers should promote and maintain an Environmental Policy and be committed to it. They should be able to demonstrate that all operations proactively comply with all applicable environmental laws and regulations.

022 The manufacturer shall provide a good practice guide relating to aftercare and maintenance of their manufactured doors etc. and its component items. The Provider shall ensure that each Customer receives a copy of this.

General Design of External Doors

Doors - Street Properties

023 Each Property case may be different and therefore approval will be required for each Property. In all cases, the proposed new style of external doors will need to comply with Building Regulations and in particular fire egress in terms of all habitable rooms.

Timber External Doors

024 The Provider is responsible for ascertaining the correct dimensions and sizes of every existing external door in each Property.

General External Door Installation

025 All sidelights are to achieve an 'A' energy rating certificated by the British Fenestration Rating Council (BFRC).

026 All replacement doors and sidelights must achieve Building Control standard of Maximum U-Value = 1.8 W/m^2K for units with >50% internal face glazed.

027 U-values of external doors and sidelights glass and frames must meet the Building Regulations and must be BFRC Certified and have an "A" Rated Energy Index. Centre Pane "U Value" of 1.2W/m^2K (or better). Thermal Transmittance Whole Window "U Value" of 1.4 W/m^2K (or better)

028 All External Doors must pass testing undertaken to PAS 24 and be Secure by Design certified. All certification documents are to be forwarded to the Client's Representative and kept updated – this must include test certificate, report and list of tested ironmongery with product manufactures names, type etc. Evidence of compliance with PAS 24 (Specification for Enhanced security performance requirements for door-sets and windows in the UK) will be a condition of tender.

029 All new external doors and door frames are to match existing size openings in existing positions (i.e. brick reveals to be maintained externally where necessary on all occasions).

030 Before installing the new door frame, the existing structural opening should be checked to ensure its stability and existing lintels checked to ensure their condition soundness. Any large repairs should be reported to the Client's Representative.

031 It is permissible to "chip back" a small area of plaster (typically 25mm) extending full height up the existing reveals and immediately adjacent to the door frame; this will both facilitate removal of existing door frame and installation of replacement door frame.

032 All openings should be cleaned of debris etc., and any minor making good is expected to be carried out as part of the external door replacement works.

033 All metal fixings should be at least as corrosion-resistant as applicable Standard Grade 3. 13.5.

034 Door frames shall be secured in accordance with the recognised "fixing distances" for strap / lug fixings and through-frame fixings as recommended in applicable Standard.

035 Sills must be properly supported and fixed to ensure there is no likelihood of water penetration.

036 All internal reveals should be made good and plaster or decorations made good to match existing.

037 External sealing should be by means of a cement/sand pointing around the new door frame to conceal larger gaps and then a low modulus white silicone sealant to applicable Standard. Only silicone sealants recommended by the manufacturer/supplier should be used and not general purpose mastics. All abutments of the door frames should have silicone sealant applied.

038 Prior to installation, the doors are to be supplied with adequate protection against damage caused by slippage, distortion etc. They must be stored under cover in a dry and secure position, stacked vertically, not horizontally.

039 The door frame dimensions must be checked with those of the opening before removal of the existing door frame.

040 A craft knife should be used to score around the perimeter of the existing frame in order to minimise damage to plaster/decoration.

041 External doors and frames to be removed and all existing mastic and debris cleaned away. The Provider is to ensure that the work is carried out in a neat and tidy manner, with all rubbish removed to a lockable skip at the end of each working day.

042 The damp proof course is to be checked by the Provider to ensure one is present and in good condition. Any defects present are to be brought to the attention of the Client's Representative immediately.

043 The new door frames must be installed in accordance with the manufacturer's requirements, taking into account the construction of the Property. Fixing methods should take into account thermal movement. The method of fixing will generally be either through frame fixing or lug fixing.

044 Door frames must be installed plumb and square without twisting, racking or distortion of any member in accordance with the manufacturer's installation tolerances.

045 The door frame must be centred in the aperture and be positioned so that it does not bridge the damp proof course. The amount by which the new door frame is set back from the outer face of the wall is determined by the requirement to set the internal face as close to the existing internal finishes as possible and by the bridging of the damp proof course.

046 The door frames must be secured so that the corner fixings are a minimum of 150mm and a maximum of 250mm from the corner of the frame and the intermediate fixings at centres no greater than 600mm.

047 Should the manufacturer require more onerous fixing requirements then these must be adhered to. Care should be taken not to overtighten bolts and that packers/shims are not allowed to fall away. Care should also be taken to ensure that water tightness is maintained where lintels have to be drilled for fixing.

048 All screw fixing heads which pass through the profile are to be spot sealed with appropriately coloured or clear silicone sealer or a PVC-u cap.

049 Where electrical, television, telephone wires etc., enter a Property either through a hole in the existing door frame, or adjacent to it, then such services must be routed around the door frame. A split plastic tube of suitable diameter and length for entry into the Property should be slipped over the cable so that connections do not have to be disturbed on the appliances, with the ends of the tube sealed with white silicone sealant on completion of the external door installation.

050 Where any internal plaster work is disturbed when the existing door frames are removed, the Provider must make good the plasterwork. PVC-u cover mouldings may be used to a maximum width of 30mm.

051 Internally the door frame must be well caulked and the gap between the reveal finish and the frame flush pointed with a one part white emulsion acrylic painter's caulk.

052 Each sidelight must be permanently marked or labelled in an unobtrusive position (not visible when the opening light is closed) showing details of the manufacturer, the job number of the sidelight and the date of manufacture.

053 The standard for glass units is applicableStandard –part 2 (also part 3 for gas filled types)

054 Special care and attention must be taken to protect and avoid any damage to external doors and frames. Any damaged external door or frame must be replaced with a new external door or frame and it must be at the Client's Representative's sole discretion as to whether a repair to an external door or frame is acceptable.

Safety Laminated Glass

055 All glazing in doors in critical locations as defined by the Building Regulations (i.e. glazing below 1500mm height in doors with a zone of 300mm either side of the door) is to have both skins of glass units glazed with laminated low E glass – assumed to be 2 No. skins of 6.8mm laminated safety glass.

056 Internal and external panes in sidelights, double glazing units to be laminated glass as default. An exception may be made where a staircase ends or turns immediately inside the doorway – in this instance the internal pane may be toughened (i.e. to reduce impact pressure) – written notification must be given to the Client's Representative. External pane must always be laminated to provide security and satisfy PAS 24.

057 All safety glass is to be permanently marked on both panes with applicable Standard kite marks, which are to be visible after installation.

058 Both sheets of glass making up the sealed double glazed unit must be safety glass where required by the above descriptions.

059 Details of external doors in critical locations are to be stated in the Provider's proposals for each new external door when proposed drawings are forwarded to the Client's Representative for approval.

Glazing - General

060 External doors and sidelights must be manufactured so that glazing or re-glazing on site is possible without the need to remove the outer frame from the structure of the building.

061 All glass and insulated glazed units should be carefully examined for damage, especially at the edges, prior to installation. Defective items must not be used.

062 The two panes of glass in the double glazed unit are to be held apart with warm edge technology, spacer bars to improve thermal efficiency and reduce the possibility of condensation forming around the perimeter of the sealed double glazed unit.

063 The glazing of the doors or sidelights must be carried out immediately after the installation of the frames and casements.

064 On completion of external door installations, all glass to be cleaned internally and externally and left clean and free from blemishes.

065 Any glass with scratches cracks or defects to be replaced by the Provider at no charge.

066 All external doors and sidelights to be **INTERNALLY GLAZED** in argon filled sealed units in low Emissivity glass, using pre-formed gaskets inserted during the profile extrusion and secured by knock-in PVC-U glazing beads with mitred corners.

067 All doors/sidelights will be totally dry-glazed with minimum 12mm wide x 3mm thick double-sided PVC foam closed cell high density security glazing tape on the inside frame rebates. Co-extruded EPDM corded glazing gaskets on the frame are acceptable as an alternative provided that bead security clips are used in conjunction with it.

068 Glass shall be at least the minimum thickness to meet wind load requirements indicated in the applicable Standards.

069 Glazing beads are to be able to withstand the design wind loading in accordance with applicable Standard Part 1 and the tests specified in the applicableStandard.

070 Fans are not permitted in sealed units.

071 Details of all glass types are to be stated in the Provider's proposals for each new external door or sidelight when proposed drawings are forwarded.

Fire rated doors/frames/door-sets – replacement and installation

072 The replacement and/or installation of internal/external fire rated doors, door frames, door-sets and any associated components such as stops, architraves, thresholds, trims, seals, ironmongery and the like must be undertaken only by persons that are properly accredited to do so by having undergone and passed an approved "Fire Door Installation Awareness Course" such as that developed by the British Woodworking Federation (BWF) with the National Open College Network (NOCN), or equivalent.

Certificate of Test Sidelight/doors

073 All manufacturers of sidelight/doors etc. shall be required to have a "sample" submitted for testing at an accredited testing station. These samples must be inspected against the requirements set out above. All manufacturers are required to have "third party" registration provided by BBA, BSI or equivalent recognised accredited quality licensing authority for the manufacture sidelights/doors etc.

074 A copy of the respective Certificate of Compliance for Secure by Design and PAS 24 must be made available at the time of submitting for inspection, which confirmations that the manufacturer can produce the product to the required standards, along with all testing data. The Provider should be aware these certificates may form part of the document handover pack and if not supplied on completion and handover of the Work, will incur a financial penalty.

Delivery to site of sidelights/doors etc.,

075 In each option, primary consideration must be given to current health and safety at work legislation in respect of site practices.

Option 1 – Pre-glazed

Will be valid where the external door manufacturer is commissioned on a supply only basis; the installation, therefore, being undertaken by the Provider.

Option 2 – Un-glazed

Will be valid where the external door manufacturer is commissioned on a supply and fit arrangement. This will involve the supply of insulating glass units and pre-formed glazing gaskets to be applied on site in accordance with the manufacturer's technical data sheet.

076 Critical considerations to be observed:

- All glazing must conform to the recommendations contained in the applicable Standards. The setting and location block positions, frame to glass and bead to glass gaskets etc. with any glass or insulating glass units must be installed in accordance with the relevant manufacturer's technical data sheet and as per the recommendations in the applicable Standard;
- All insulating glass units shall be examined for damage prior to installation; defective units shall not be used;
- Insulating units with "low emissivity coatings" shall be oriented in accordance with the manufacturer's technical data sheet; and
- Where safety glazing forms part of an glazing unit, it remains a legal requirement to ensure that the marking remains visible after installation.

Protection, Transportation, Storage & Pre installation check

077 The Provider must ensure the manufacturer/supplier is responsible for ensuring that all sidelights/doors are suitably protected to avoid damage during transportation and storage.

078 Sidelights/doors/glazing units (if applicable) shall not be flat-packed, but stood vertically during transportation.

079 Sidelights/doors/glazing units in storage to be "kept apart" preferably with soft packing to reduce risk of transport/handling damage.

080 The Provider must ensure that all sidelights/doors stored on site are housed within a secure weatherproof storage facility on-site until the time of fitting. Pre-finished joinery shall not be stored in direct sunlight.

081 Prior to commencement of installation, the Provider should undertake the following checks -

- Consult survey sheets and ensure these are correct and clear;
- All survey measurements are recorded;
- The doors/sidelights supplied; are of the correct fenestration and design and in accordance with the external door schedule approved by the Client's Representative;
- The glass type and pattern are correct;
- External door and glass sizes are compatible;
- All trims, gaskets etc., are correct and fitted correctly; and
- Consult survey sheets to ensure external doors supplied are correctly marked and identified to those Properties being replaced.

Site Approval on delivered

082 Previous to the benchmark Properties being set, a sample Pre-Finished, GRP, Aluminium or Timber external door/sidelight shall be delivered to site by the preferred manufacturer/supplier for inspection and acceptance by the Client's Representative.

083 The manufacturer/supplier in providing the sample for acceptance must demonstrate full compliance with the specification requirements. Evidence of thermal efficiency standards being offered must be available to the Client's Representative for verification.

084 The sample external door/sidelight (upon acceptance) will form the "benchmark external door/sidelight" for the remainder of the project.

085 The Client's Representative shall reserve the right (at any stage) to have any external door/sidelight which is delivered to site, subsequently removed for further inspection/audit and/or independent testing to ensure that the specification requirements are being complied with.

Remove and Install on same Day

086 Existing doors to be removed are most likely to be timber in nature, although a small percentage of properties may have original PVC-u external doors and frames. The Provider should make every effort to have all existing external doors and frames recycled and provide waste disposal reports to the Client's Representative.

087 Replacement external doors and frames must be installed on the same day that the original external doors and frames are removed in order to maintain security and weather tightness of the structure. The existing door frames should be removed with care in order to avoid damage to the Property structure and its finishes and without permitting any subsidence of the structure during or after the operation.

088 When providing more than one replacement external door to a single Property the Works should be undertaken on one set day to reduce the amount of disturbance to the Customer.

089 Any defects that become apparent in the integrity of the structure upon removal of any door frame should be reported to the Client's Representative immediately.

090 If there is a sub-sill or threshold, e.g. Concrete, slate, brick or tile, below the existing door frame it must be left in position unless otherwise specified.

Protection of existing fixtures etc.

091 Allow for protection of floor coverings, furniture and Customer's belongings throughout the duration of the Works.

092 The Provider is responsible for moving any furniture, fixtures, Customer's belongings and fittings that may be damaged during the installation of the external doors, prior to commencement of the replacement of any external door and repositioning such items upon completion of the installation to each Property.

093 The Provider will be responsible for both internal and external protection. After the removal of the existing door, frame and sidelight the Provider is to carefully cut back any internal or external flooring, finishings, cladding, wallpaper and decorations to allow for the installation of the new frames etc. The Provider is responsible for making good all structures, finishings and decorations up to 100mm from the face of the frame or sill.

094 The Provider must ensure that clean and sufficient dust sheets or protective coverings are used, when carrying out any Works. The Provider must ensure he has taken all adequate provisions to ensure that the soiling or damage to floor coverings and needless damage to decorations are avoided. The Provider must allow for any cleaning of floor coverings required as a consequence of the Works and this should be reflected in the tender Rates submitted.

095 It is recommended the Provider undertakes a Schedule of Condition and agrees this with the Customer prior to undertaking any Works. It is therefore considered prudent to take photographs of any damaged Customer's belongings within the vicinity of the Work prior to commencement and, where appropriate, to obtain a signed disclaimer.

Fixings

096 Screws used for fixing non-reinforced PVC-u sections will be of carbon steel with a suitable corrosion protective coating and feature a double helical thread, spoon point with a countersunk head.

097 Fixings must incorporate a combination square/cross recess drive to provide a non-magnetic stick fit.

098 All screws, nuts, bolts and other fastenings must be of corrosion resistant material, or be treated to give corrosion resistant properties. When subject to the acetic acid salt spray test specified in the applicable Standard for a period of 144 hours, the corrosion resistance of treated mild steel must be equal to or better than that of stainless steel samples subjected to the same test conditions.

099 All ironmongery, fixtures and fittings must be of materials resistant to, or protected against atmospheric corrosion. Metals in contact with each other must be compatible so as to prevent galvanic corrosion of dissimilar metals by electrolytic action.

100 The use of expanding polyurethane foam is not acceptable as a sole method of fixing any door frame into a structural opening, nor is it acceptable to be used as bedding for the door frame.

101 Fixing to be as recommended by in the applicable Standard, below is a brief summary, actual fixing recommendation should be taken from the applicableStandard and its example diagrams:

Secured on all sides (where practicable);
Corner fixings – 150 – 250mm from external corner;
Minimum of 2 fixings per reveal;
If head is fixed with expanding polyurethane foam, then head fixings can be – • Frame width up to 1200mm – no fixings • >1200mm to <2400mm – one central fixing • >2400mm to 3600mm – two equally spaced fixings

102 The use of expanding polyurethane foam is permissible in terms of "foam filling" and as a useful addition to mechanical fixings. When the external door is completed and finished there should be no visual evidence of polyurethane foam either internally or externally.

103 Installation "packers" should be used to set the door frame onto to allow sealant/mastic to be used as a full fill bedding material. The colour should match the door frame finish.

104 Intumescent foam filling is to be used in all external door installations to provide a closure to possible cold bridge of gaps between the wall and the frame. It is only to be used within the depth of the door frame profile i.e. it should not be used to fill gaps to reveals etc. which are to be plastered. Form filling is only in regard to the following situations –

1) To the head of a door frame, where the presence of pre-cast concrete or steel lintels make it impracticable or pose significant difficulties in achieving the recommended fixing distances	Up to 10mm maximum
2) To the sides of door frame to make up expansion/contraction gap left either side as a result of manufactured size of door frame	

105 Foam filling must be to the full depth of the frame using only an approved fire resistant expanding polyurethane foam complying with the applicable Standards and be of the correct fire performance rating for Building Regulations compliance.

106 All components should be supplied by a manufacturer complying with ISO 9001 accredited quality systems. A certificate passing warranty to the Client is to be issued by the hardware manufacturer on completion of the project.

107 Written confirmation of compliance with all of the above should be given to the Client's Representative in advance of commencement on site and will be a condition of the tender.

Fire barriers

108 In all methods of construction it is important to ensure that the cavities between internal and external skins are protected at openings for external doors from the spread of fire. If these openings are not protected, in the event of a fire, smoke and fire can spread through the cavity, causing danger to occupants in other parts of the Property not immediately affected by the fire. This issue is of particular concern in timber and metal framed buildings. Attention is drawn to the Building Regulations in respect of the requirement for suitable fire barriers to be present in such buildings. Guidance is given in the applicable Standards, and the current Building Regulations Approved Document B.

109 The method of construction should be identified, and where the building is of timber or metal frame construction, the type of cavity barrier should be established. Where the barrier is a cavity sock or similar, and is likely to become dislodged or damaged by the removal of the existing frames, this should be noted on the survey sheet, and instruction given to the installation team to ensure that the cavity barrier is either repaired or replaced to maintain the original level of fire protection for the Property.

110 NOTE; Timber and metal frame constructions usually have a moisture barrier included in the area around openings, to resist moisture ingress into the cavity that could affect the timber sheathing or metal studwork."

Making Good

111 The final covering and treatment of surfaces and their intersections are fundamental to the overall replacement of external doors.

112 The primary objective of making good damaged areas adjacent to the external doors is to maintain the;

- Weather-tightness; and
- Thermal performance characteristics

As required in and around reveals.

113 This protocol described below applies to all external door replacements and shall be undertaken as the primarily aim to negating the need for any redecoration during/after external door installation.

114 There will be a number of situations (i.e. age of the Property; thickness of plaster reveals; and to some extent "build issues" associated with system-built dwellings) that it may not be possible to observe all or part of this protocol. Therefore more damage may be required to the reveals and/or the door frame wall to undertake the required door frame replacement. This could result in the need for some redecoration. Where this is likely to occur, firstly the Provider is required to notify the Client's Representative at Design stage. If however this is not identified until on-site stage the Provider must note the Properties affected and alert the Client's Representative before work commences.

115 Where full plaster reveals are to be undertaken – i.e. Internal and external making good; this may take place on subsequent days, but the whole operation from start to finish of each door frame must not exceed 3 No. consecutive working days.

116 Plaster-Patching - This process will require a small degree of plaster-patching. This will include the following areas -

- All of the reveals immediately adjacent to door frame etc.;
- Part of the reveals where strap / lug fixings have been employed.

117 Finishing Trims are to be Cellular extruded PVC-UE trims/beads and must conform to the applicable Standards and as the below table;

	Internal Reveal (3 sides)	**External Bead (3 sides)**
Single bull-nosed PVC-UE trim typically 5–7mm maximum thickness	✓	
Trim width must not exceed 100mm		
Quadrant / Bead typically 12x12mm or 18x18mm maximum **OR** Single bull-nosed PVC-UE trim typically 5 – 7mm maximum thickness		✓
Trim width must be in range 20 – 25mm maximum		

118 Trims are not to be used to simply provide or enhance the weather tightness of the door frame or any perimeter joints. Finishing trims shall be used to neaten the interface between frames and opening, they are only to be used in conjunction with the "plaster-patching" / making good situations as stated above. All joints must be left 'neat and tidy' with an acceptable tolerance of +/- 2/3mm on all joints/trim abutments and sealed with sealant of matching colour.

119 Internal finishing trims shall be compatible with the Material of the door frame and must be colour-matched

120 External finishing beads/trims shall satisfy the above criteria and be of an exterior quality Material used in accordance with the manufacturer's technical data sheet. External beading is not required where the external reveal has been re-plastered to match existing.

121 For the avoidance of doubt, door frames should be measured and fitted as described above and beads/trims should only be fitted to the opposite side of the determined cover/overlap. Only in exceptional cases where reveals are determined as flush will internal and external beads/trims be acceptable.

Fixing of Trims/Beads

122 All internal trims shall be secured in every case to a firm backing (junction of frame and reveal) with a low modulus silicon sealant (as below) and sealed all round.

123 All external beams/trims shall be secured in every case to a firm backing (junction of the frame and plaster reveal) with the low modulus silicon sealant (as below) and sealed all round.

Sealants

124 Sealants must comply with applicable Standard and be low modulus grade

125 Perimeter joints externally and internally around the "as installed" door frame shall be sealed with a low modulus silicone sealant and "smoothed" to provide a good seal.
The sealant shall be appropriate to –

- The frame surface and colour;
- Any substrate material;
- The specific joint size and configuration; and
- Potential joint movement and weather exposure.

Implications – Customer's Blinds etc.,

126 The inclusion of a finishing trim to existing reveals and sill may in certain circumstances create an issue around the re-fitting of Customer's blinds etc. The Provider shall pay due regard to the existing sidelight dressing(s) and where finishing trims are required that a "slim-line" version (5mm or less) is used.

Repairing damaged prefinished coatings on site

127 Localised repairs to coatings shall be affected by brush application on site using the same coating Material and build-up as the factory application with no discernible difference upon completion. All repairs shall be carried out in accordance with the joinery manufacturer's technical data sheet, by a competent person and to the satisfaction of the manufacturer and Client's Representative to ensure continuance of the warranty.

Cleaning of External Doors

128 The protective tapes shall be removed from the as installed external doors, frames and sidelights immediately or as soon as practicable after installation and the door (frame and glazing) cleaned with a suitable cleaning agent.

Final Completion Checks

129 Upon final completion of each and every external door installation, the Provider is to confirm and check the following:-

- All glazing beads are adequately fitted and in good order;
- All hardware functions and locks operate correctly and are not stiff to use;
- All frames and glass are free from cracks, breaks and scratches etc. All frames and glass are cleaned and all internals of frames are swept clean.;
- All openings are square and operate correctly;
- There is no movement to the door;
- All hinges etc. are clean and operate correctly;
- All making good internally and externally are completed; and
- All trims are clean and sealed;

130 Once all the above items are completed, the Provider is to demonstrate the operation of the external door to the Customer and provide the Customer with their own operating instructions for the external doors. In addition, the Provider is to provide a Customer Satisfaction Card (to be supplied by the Client's Representative) which the Customer is requested to complete and return by free postage to the Client. In due course the Provider will be required to provide any means necessary to allow the Customer to sign Satisfaction Card electronically for uploading to the Client's Asset Management software.

Photographic Evidence – Removal/Installation of Sidelights/Doors

131 Take digital photographs of each completed sidelight/door installation.

132 The photograph should clearly show the completed internal reveals and identified by address and room (i.e. this may be done by placing an address and room labelled clipboard against the external door at the time of taking the photograph – ensure clipboard does not block image of door).

133 The photographs should be retained electronically by the Provider and if requested provided on an individual basis to the Client i.e. in the event of any Customers making a claim against the Client.

134 The Provider should note that the Client's Representative will from time to time ask for evidence of these photographs and how and where they are stored. The Provider is required to retain these images for at least 6 years after the Date of Completion (in accordance with the Client's Retention of Documents Policy and legal timeframe for a Customer to make a claim).

Client's current manufacturers/suppliers/products

135 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

REPLACEMENT EXTERNAL, COMMUNAL AND FLAT ENTRANCE DOORS – GENERAL [MIDDLE TIER]

REPLACEMENT EXTERNAL, COMMUNAL AND FLAT ENTRANCE DOORS - GENERAL

Secured by Design:

201 This section is to be read in conjunction with the general specification for 'Replacement Windows and External Doors – Surveying and Installation' section, which provides details of surveying, sampling, installation, finishing etc. - generally as applicable Standard (Windows and Doors – Code of Practice for the survey and installation of windows and external door-sets).

202 All new external doors must meet the requirements of "Secured by Design" (SBD) certification. External Doors; PAS 24 Doors of Enhanced Security

203 All new external doors complete with frames and factory installed double glazing must be high performance proprietary door sets supplied by a certified SBD manufacturer. Fire doors must have additional testing certification in accordance with the applicable Standards.

204 These may be PVC-u, timber or timber/steel faced, composite door sets complete with a Secured by Design approved locking mechanism.

205 PVC-u external doors, timber composite or steel faced composite doors are suitable for areas where high security or severe exposure rating requires greater durability and a multi-point locking mechanism.

206 Sample doors complete with proposed locking mechanisms are to be supplied for the approval of the Client's Representative.

Door Sets

207 The Door sets must meet the performance standards set out in this Specification. The Provider must provide to the Client's Representative a copy of the Secure by Design certificate and PAS 24 test certificate along with the list of door components/ironmongery as supplied by a UKAS test house prior to commencement of the Contract.

208 The door-sets supplied must be to exactly the same specification as those tested.

209 All timber doors to be to the Client's schedule of standard external doors.

REF	DOOR TYPE
SE.1SG	Single, small, glazed top panel.
3P.1SG/2SP	Three panel door, top panel double glazed with safety glass, two bottom panels with solid hardwood panels
4P.2SG/2SP	Four panel door, top two panels double glazed with safety glass, two bottom panels with solid hardwood panels
5P.2SG/3SP	Five panel door, top two panels double glazed with safety glass, three bottom panels with solid hardwood panels
6P.2SG/4SP	Six panel door, top two panels double glazed with safety glass, two middle and two bottom panels with solid hardwood panels
6P.6SP	Six panel door, top two panels, two middle and two bottom panels all with solid hardwood panels
FL.1SG	Flush door with 1 single panel of double glazed safety glass
LBS	Ledged, braced and sheeted door
FLBS	Framed, ledged, braced and sheeted door

[Amend ref. nos. as appropriate]

210 Each door-set shall have the name of the manufacturer and date of manufacture clearly stated on one rebate by means of a discrete permanent label to aid future traceability if required.

211 The fitting tolerance must be plus or minus 5mm, it is the Provider's responsibility to take all site dimensions for pricing purposes and for fitting purposes.

212 Door sets which are deemed to be outside the fitting tolerances must be remade at no further expenses to the Client.

213 Where existing door sets are removed, the new assembly must be installed and left in full working order before the end of the same day.

214 The manufacturer of the door sets must be stated on the Provider's tender and a guarantee must be supplied indicating the life of the components.

215 Door Frames are to be fitted with weather seals of low density cellular core encased in low friction liner which are capable of taking up reasonable seasonal movement in all temperatures and returning to original profile. The weather seals shall be inserted into a plough within the door frame rebate while being **fitted in one piece with lower ends extending to bottom of trapper bar**.

216 Door Frames to be either:

- white reinforced PVC-u to applicable Standard; or
- hardwood complying with applicable Standard (density range 650-725 kg/m cu) with factory applied coating to match door.

Level Access Thresholds

217 All external door sets (main and secondary entrances including doors leading onto a patio) must have level access thresholds (max 15mm high threshold).

218 Weather bar should be capable of renewal in-situ i.e. without the need to remove the door frame. The weather bar unit shall have a performance rating to comply with the applicable Standard.

Door Performance Requirements

219 All the external doors must meet the following minimum performance criteria for weather resistance as defined in applicable Standard -Classification for Weather tightness.

Air Permeability	Test Pressure Class 300 Pa Test Method as applicable Standard
Water Tightness	Test Pressure Class 200 Pa Test Method as applicable Standard
Wind Resistance	Test Pressure 2000 Pa Test Method as applicable Standard

230 All doors must be completely draught free when closed. The doors are to meet the **Severe Exposure Rating** category

Side Lights to Living Room External Doors

231 If the glazed opening door is in a living room, the sole means of natural daylight and ventilation must not be from that door.

232 Additional opening side light windows with trickle ventilators and security restriction, must be provided in order to allow ventilation to the room without opening the door all year round.

Double Glazing

233 All double glazing to any external doors and their associated side lights (or, within 400mm of the door lock) must be have at least one pane of laminated glass to comply with Secured by Design.

234 Door and side light glazing must be 24 mm hermetically sealed double glazing units manufactured with laminated glass.

- Front door to be in small panels and be obscured.
- Front door must incorporate facilities to view callers
- Glazing to rear doors to be clear

Door Frames

235 Door Frames to door handle relationship to allow for a min of 50mm from the frame edge to the lever handle. Lock back-set to accommodate this dimension.

236 All frames must have a factory fitted removable weather-strip to frames and weather-strip to the bottom edge of doors.

237 Door frame set back must be 65 mm minimum reveal to external face of wall.

238 New lintels to windows and external doors must be insulated galvanised steel to applicable Standard manufactured by an approved manufacturer and have an Agrément Certificate. End bearings must be a minimum of 150 mm.

239 All external door frames are to have mastic pointing provided all around. Such mastic pointing must be specified to be applied strictly in accordance with the manufacturer's technical data sheet and good practice. The Client has a preference for two part polysulphide mastics in areas that are vulnerable to vandalism.

Door Ironmongery

240 Ironmongery must be provided in full compliance with "Secured by Design". Handles and locks must be easy grip type suitable for use by disabled persons.

241 **The requirements of Secured by Design (SBD) and the approved and tested locking mechanism of the selected SBD Door Licence Holder may override this section.**

242 All external doors must be hung on 3 no stainless steel grade SS202 or coated zinc alloy patent hinges (having stainless steel) pins butt hinges.

243 Non-adjustable hinges to be fitted to flush doors.

244 Rebated door set hinges to incorporate lateral adjustment.

245 Fire door hinges must be CE Marked and tested to applicable Standard. Hinges shall have high corrosion resistance, greater than applicable Standard grade 4.

246 A minimum of 2 no hinge bolts must be fitted to all external access doors providing hinge side enhanced security to PAS 24.

247 Doors to have multi-point lever handle security locking mechanism meeting the applicable Standard and tested to PAS 24 and to comply with (and stamped) Secured by Design. Front doors to be provided with a security chain.

248 Multi-point locking espagnolette system to be provided

249 Cylinder and Keys: All cylinders to be nickel plated on brass finish. Cylinders should have a large thumb turn to suit the elderly. All cylinders to be double profile and a minimum five pin tumblers, 1000 differs, anti-bump flush. Minimum of 3 keys supplied with each cylinder.

250 Doors generally fitted with level handles operational both sides of door.

251 Pull Handles and Push Plates: To be provided only where elements of communal accommodation occur.

252 Pull handles must be 230mm x 19mm dia. bolt through fixed and nylon or plastic coated finish. Push plates to be 300 x75 x 1.5mm drilled and countersunk fixed, finishes to match the Pull Handles.

253 Letter Plates: Front doors to Properties are to have a telescopic letter plate with external flap (finish to match door ironmongery) and an inward sprung flap, on the inside of the door.

254 Letter Plates must be draught and fire proofed internally and have a finger hood to prevent access to door locks (minimum distance from door locks 400 mm).

255 Intumescent Liners and Smoke Stopping must be provided to fire doors.

256 Internal flat entrance door off communal corridors must have a fire and acoustic rated letter plate with integral intumescent liners and a smoke stopped internal letter flap. Fire tested to satisfy the requirements of the applicable Standard. Acoustic tested to satisfy the requirements of applicable Standard to 29db/Rw.

257 Door numerals must be provided to the front entrance door of each Property.

258 Door Stops: All doors are to be provided with floor, wall or skirting mounted rubber stops on a nylon or plastic coated shoe where appropriate to prevent damage to walls or plaster.

259 Door Closers**:** Where required, all self-closing fire doors should have size 2 - 6 adjustable strength and back check function overhead closers.

260 Concealed door closers and hush latches may be used in individual Properties and flats if approved by Building Control.

261 Closers to Frail Elderly flats must be the 'swing-free' type operated by the activation of the fire alarm.

262 Cabling and transformers must be provided to all wheelchair Property external entrance doors for the future installation of 'power operated' door closers.

263 All overhead closers must carry a 10 year guarantee to applicable Standard.

264 Door Viewer: Front doors to Flats should have a 180 degree chrome plated door viewer fitted at:

- 1500mm above finished floor level for accessible dwellings
- 1050mm above finished floor level for Wheelchair Units

265 Door Bolts: Bolts to double doors, french windows and the like, should be of brass material satin chrome or satin nickel plated. Flush blots should be fixed in the leading edge of the second opening leaf of a pair of doors with a flat plate at the head and an easy clean socket in the floor.

266 Kick Plates: To be provided only where elements of communal accommodation occur.

267 Provide 450mm high coloured plastic kick plates to match the ironmongery on the push side of internal doors in communal and circulation areas and to all flat entrance doors on the corridor side. Flat entrance door kick plate to achieve fire resistance of door set.

268 Wall Protection: For internal communal areas only

269 Provide flame retardant corner protection to all external wall angles to a height of 1000mm using proprietary PVC-u corner protectors.

Composite Doors -Generally

270 It is intended to renew main front doors and frames on all single family Property houses with composite doors installed by the PRP or Pre-finished Timber manufacturer/contractor.

Doors -Generally

271 Generally all front doors to be styled with upper panels double glazed with laminated safety glass sealed units.

Generally all rear doors to be panel door style with upper panel double glazed with laminated safety glass sealed units.

272 Customers to be given the option of cat flaps to be installed to lower panels of rear door.

273 Doors within Conservation Areas will be renewed with a pre-finished timber door

Composite Front Doors to Houses not within Conservation Areas

274 Style and choice of front doors is to be agreed with Customer and Client's Representative on each individual project. The Provider is to provide each Customer with a sheet listing and showing the style of doors available and five colours available, and the Customer is to choose and sign the list as to which door they wish, and copy of the signed sheets to be forward to Client's Representative. Door colour should be either be translucent coatings or from a manufacturer's heritage range. Due to on-site issues with expansion etc., dark coloured doors should be avoided.

275 All existing door bells are to be re-fixed

276 Where fanlights are above the doors, the fanlights and frames are to be included as part of the renewal.

277 All glazing doors to be double glazed laminated safety glass sealed obscure units unless otherwise Instructed.

278 All doors to have brass numbers on the outside and brass draught-proof letter boxes.

279 All doors to have brass multipoint lever handles.

280 All doors and locks to meet Secure by Design applicable Standard and tested to PAS 24 Standard.

Timber Front Doors to Conservation Areas

281 All statutory consents and permissions required to complete the Work to be obtained and/or checks to be made to ensure these are in place before ordering Materials and commencing Corks.

282 All new timber front doors where requested are to be purpose made pre-primed minimum 44mm thick softwood doors, with hardwood painted frame.

283 It is anticipated that most doors will be 4 panel with 2 No. upper panels to be double glazed laminated safety glass sealed obscure units, and 2 No. lower panels to be mouldings to match existing.

284 Brass numbers and brass draught-proof letter boxes are to be as Clause 060 above.

285 All doors to have brass mortice night latch and separate 5 lever deadlocks with finger turn snib internally.

286 Where fanlights are above the doors, the fanlights and frames are to be included as part of the renewal.

Installation

287 Undertake surveys and installation of the doors at the same time as the windows installations.

288 Ensure the correct installation of each door-set.

289 The door-set shall be placed on a concrete threshold and bedded on a low Modulus Silcon, minimum depth of bed 2mm, maximum depth of bed 4mm. All door-sets shall be installed using heavy duty galvanised perforated metal straps at 150mm from corners and maximum 600mm centres between these fixings.

290 Door-sets may also be fixed using through frame fixings provided that the existing reveals are sound.

291 Fixings shall be properly countersunk, plugged and head of plug coated to match frame. Split frames (i.e. PVC-u frames) as a result of bad fitting workmanship shall not be accepted and may result in the door-set being entirely replaced at no extra cost to the Client.

292 Expanding polyurethane foam must not be used as a sole method of fixing.

Timber Architraves and Sills

293 To every new timber door and door frame, carefully remove all existing internal architraves and replace to match existing in pre-primed ogee or similar timber, with mitred joints to architraves. All timbers to be finished in gloss paint.

294 All gaps to walls or gaps to joints are to be sealed prior to decorations.

Painting of Timber Sundries

295 To all new timber sill boards, pre-prime, architraves and sill boards before fixing, and then once installed, rub down, fill as necessary and paint 2 No. coats white undercoat and 1 No. gloss white paint, rubbing down between all coats.

296 Include to repaint existing external concrete sills and thresholds externally to the doors and touch up any painted stonework or render around the door frame to match existing, as disturbed during the renewal Works.

Client's current manufacturers/suppliers/products

297 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

GRP EXTERNAL DOOR-SETS AND SCREENS
[LOWER TIER – Client to delete if not applicable]

GRP ENTRANCE DOOR-SETS AND SCREENS

General

301 This section is to be read in conjunction with the general specification for 'Replacement Windows and External Doors – Surveying and Installation' and 'Replacement External Doors – General'.

302 This Specification is intended to describe the performance criteria to be obtained for the manufacture, supply and installation of inward opening GRP doors and frames and associated PVC-u windows. Provider's must ensure that their proposed system completely satisfies all the relevant standards detailed.

303 This Specification is applicable to ALL Properties and the Provider's price must cover the location of all Properties and doors being renewed. Generally Properties will be occupied during the course of the Works.

304 This Specification describes works in detail however not all items of work will be applicable to each Property, nor is work referred to exhaustive. All doors, frames, fanlights and sidelights must pass testing to PAS 24 and must be "Secured By Design" certified. All certification documents are to be forwarded to the Client's Representative and kept updated – this must include the test certificate, report and list of tested ironmongery with product manufacturer's names, types etc. Evidence of compliance with PAS 24 (Specification for Enhanced security requirements for door-sets and windows in the UK) will be a condition of acceptance of completion.

305 All doors must achieve Building Control standard of Maximum U-Value = 1.8W/m^2K.

306 Only products defined herein shall be used; alternative products will not be acceptable unless agreed with Client's Representative.

307 Stiles and rails to be engineered timber edge bonded with 1.5mm or high strength engineered double plastic composite. Skins to be GRP transfer moulded and U.V. stable, thickness of skin is determined by the door manufacture and as a result of PAS 24 testing. Bonding agent is to be moisture cure polyurethane adhesive with core of 39mm CFC free fire resistant rigid foam insulation with the correct fire performance rating to comply with the Building Regulations.

308 Door glazing to be double glazed laminated glass fitted in separate glazing cassette mechanically fixed to sub-frame and internally beaded.

309 Arrange access with the Customer to carry out a pre-manufacture site survey as recommended by the British Plastics Federation Code of Practice for the Survey of PVC-u Window sets, current edition. This survey will include the provision of a pro-forma questionnaire offering the available options from which the Customers can choose.

310 The visit will include:

- consulting with the Customer about choices,
- taking measurements sufficient to prepare scale drawings
- scheduling Customer fittings and their condition
- any other site condition that may affect installation

311 Customers are to be given a choice of 5 front door types as table below.

REF	DOOR TYPE
SE.1SG	Single, small, glazed top panel
3P.1SG/2SP	Three panel door, top panel double glazed with safety glass, two bottom panels with solid panels
4P.2SG/2SP	Four panel door, top two panels double glazed with safety glass, two bottom panels with solid panels
5P.2SG/3SP	Five panel door, top two panels double glazed with safety glass, three bottom panels with solid panels
6P.2SG/4SP	Six panel door, top two panels double glazed with safety glass, two middle and two bottom panels with solid panels
6P.6SP	Six panel door, top two panels, two middle and two bottom panels all with solid panels

[Amend ref. nos. as appropriate]

312 Other choice options are to be:

Element	**Location**	**Options**
Colour	Front/Rear Door	White (RAL 9003)
		Blue (RAL 5004)
		Red (RAL 3002)
		Green (RAL 6009)
Glazing	Front	Obscure - Cotswold
	Rear	Clear only
Ironmongery	Front/Rear	Gold/brass
Surface Finish	Front/Rear	Wood grain effect

313 All screen/door styles must be in accordance with modern casement design where possible, allowing for exceptions where fire egress casements are necessary. Unusual aesthetic arrangements are to be referred to the Client's Representative for decision.

314 All component parts are to be applicable Standard "Kite marked", or BBA approved or equivalent, verification of which to be supplied on request by the Client's Representative.

315 PAS 24 certification from the Manufacturer and Provider must be provided to the Client's Representative before manufacture.

316 The sidelight/screen types are to be as existing in respect of configuration and opening lights. However, sidelight/screens in conservation areas, areas of outstanding natural beauty or historic buildings must be discussed with the Client's Representative for likely planning approval issues.

317 Design drawings are to be prepared by the Provider prior to manufacture. A copy is to be supplied to the Client's Representative before manufacture commences.

318 Carry out a pilot installation prior to full commencement of the Work, to ascertain the correct provision and detailing of the installation.

Programme and Security

319 In the case of numerous installations a programme for the Works is to be prepared by the Provider and agreed by the Client's Representative, before Work commences.

320 Provide 14 days' notice, and agree the timing of the Works with each Customer. When undertaking Works they need to be carried out as quickly as possible, in order to reinstate all facilities as soon as is possible. Full security, wind and weather tightness must be provided at the end of each working day in each occupied Property to suit the Customer's/Client's needs.

321 The installation of a door and frame, fanlights and sidelights must be carried out in one continuous operation within the working day. The security, wind and weather tightness of the Property must not be compromised at any time.

322 All making good of the structure and fabric must be carried out within one working day following the installation of the door etc., Any making good will not be left outstanding over weekends without the permission of the Customers and the Client's Representative.

323 The Client's Representative is also to be notified of the proposed commencement and completion dates, and proposed date for completion inspection once all the Works are completely finished including any snagging by the Provider.

324 Agree a maximum number of Properties to be worked on at any one time before the Works programme begins (to suit number of Properties/Contract Period available).

325 A Property must be 100% complete prior to commencing on further Properties above the agreed maximum and each completed Property must be signed off by the Customer and the Client's Representative.

Protection

326 Allow for protection of floor coverings, furniture and Customers belongings throughout the duration of the Works. Include for moving furniture, Customers belongings and everything necessary in order to carry out the Works and minimise disturbance to the Customers as far as possible. On completion of the Works place all previously moved furniture and belongings in locations agreed with the Customers. Dust sheets must be used at all times during the Works to prevent any damage.

327 Accept responsibility for any damage to carpets or Customers belongings, undertake a schedule of condition and agree this with the Customer prior to undertaking any Works. Take photographs of any damaged Customer's belongings within the vicinity of the Work prior to commencement, and where appropriate to obtain a signed disclaimer.

Stripping Out

328 Carefully remove existing doors, frames, sills, fanlights, sidelights and all associated fixings and prepare existing openings to receive the new installation. Dispose of all unwanted material and recycle were possible.

329 Take care to carefully remove remaining Customer fixtures and store to one side for reinstalling and refix on completion.

330 Carefully remove coatings, panelling, tiles or sheeting of any kind from adjacent walls and ceilings generally back to the plastered surfaces. Make good, repair or replaster to receive new fittings, tiles and decoration.

331 After the removal of the existing door, frame, sill, fanlight and sidelight the Provider is to carefully cut back any internal or external flooring, finishing's, cladding, wallpaper and decorations to allow for the installation of the new frames etc. The Provider is responsible for making good all structures, finishing's and decorations up to 100mm from the face of the frame or sill.

Replacement Doors - General

332 The Provider must ensure that all door-sets and their installation fully satisfy the relevant standards detailed.

333 Manufacture, fabrication and installation should be suitable in all respects for: Low Rise Domestic Structures

334 **Important Note:** Dimensions, if shown, are for guidance only and the Provider is responsible for taking all necessary site dimensions to ensure that door-sets are manufactured to fit accurately and properly.

335 No frame extensions or make up pieces are to be used to compensate for incorrectly measured openings.

336 Fire doors are to have been tested (at a UKAS accredited test facility) to applicable Standard. Fire doors are to have achieved fire resistance integrity in excess of 30 minutes and a door-set classification of FD30S. On completion of installation, the Client's Representative is to be furnished with 2 copies of all documents within clause 032 of the Fire Door–Sets section. Fire door to be individually referenced, marked and tagged by the fire door manufacture, whereby they are to keep records of all fire doors supplied and present monthly updates to the Client's Representative with the monthly reports.

Construction of Door and Frame

337 Door leafs shall be constructed with minimum 4mm high gloss through coloured external Skins, manufactured from gel coat to applicable Standard, coloured to applicable Standard, and one layer of 300gm chopped strand matt and 2 layers of 450gm chopped strand matt to applicable Standard, fully saturated with high heat distortion isophthalic / DCPD polyester resin conforming to applicable Standard type C. Skins shall fully encapsulate a jointed timber frame manufactured from prepared material kiln dried to applicable Standard, and resin laminated CFC free fire resistant rigid polyurethane foam core. The above may be over ruled/enhanced by testing to PAS24 (and fire testing, as above, in the case of fire doors).

338 Door frames shall be of moulded GRP manufacture generally to the same specification as the door leaf and have a non-staining EPDM compression seal gasket and secondary angled blade neoprene stop seal;

339 Door sills, where required for non-wheelchair required access, shall be of moulded GRP manufacture generally to the same specification as the door leaf. They shall be 50mm in height, 150mm in width and designed to accept an approved threshold.

Threshold to Front Doors

340 All external door sets (Main and Secondary Entrances including Doors leading onto a patio) must have level access thresholds (max 15mm high threshold) and a minimum clear opening width of 800mm between the blade and the stop, irrespective of the type of accommodation in order to meet the requirements of Lifetime Homes.

341 Weather bar should be capable of renewal in-situ – i.e. without the need to remove the door frame. The weather bar unit shall have a performance rating to comply with the applicable Standard.

Glazing

342 All glazing apertures are to be internally beaded with the double glazed units securely fixed using mechanical means.

343 All doors, fan lights and/or side lights shall be glazed with dual sealed double glazing units with at least one pane of laminated glass to comply with Secured by Design. Safety glass shall comply with the applicable Standards.

Ironmongery

344 Ironmongery must be provided in full compliance with "Secured by Design", Handles and locks must be easy grip type suitable for use by disabled persons.

345 Two door viewers must be provided to all front doors at heights of 1500 and 1050 mm from finished floor level.

346 All external doors must be hung on 1½ pairs of heavy duty butt hinges. Fire door hinges must be CE Marked and tested to applicable Standard. Hinges shall have high corrosion resistance, greater than applicable Standard grade 4.

347 Multi-point locks tested to PAS 24 and to comply with (and stamped) Secured by Design. Front doors to be provided with a security chain.

348 All hardware, where attached to the door-set, shall be fixed with stainless steel screws fully penetrating the timber sub frame. For all installations use screws not rivets and employ maximum retention. Do not over tighten fixings.

349 Allow for fitting of D type handle to internal face of door where identified. Position to be agreed with manufacturer.

Installation of Door-sets

350 The door-sets are to be fixed strictly in accordance with the manufacturer's technical data sheet. Care shall be taken to ensure the doors are handled and stored correctly. Frames are to be packed and wedged into the correct position to ensure a square and flat fit before fixing to the reveals.

351 The door-set is to be fixed with a minimum of eight M10 x 140mm proprietary frame fixings, direct through frame and finished with colour coded plastic not easy removed cover caps.

352 Door frame should be sealed to reveal with low modulus silicone sealant, colour matched to the door frame and neatly executed. A suitable bull nosed cover trim should be used to improve the aesthetic appearance of the joint.

353 All protective coverings on door-sets shall be removed on installation. Removal and cleaning of the frames and doors is the responsibility of the Provider.

Sidelights and Fanlights

Profile Manufacture

354 All sidelights, fanlights, door frames etc., profiles are to be obtained from the same approved system manufacturer.

355 All manufacturers must confirm as being registered as either having applicable Standard or BBA (or equivalent) independently. Evidence to be supplied. All manufacturers will be required to have membership of either, the GGF or BPF, evidence to be supplied.

356 The sidelights, fanlights, door frames etc., will be manufactured in accordance with current manuals for GRP sidelights and door frames. The profile will be manufactured to applicable Standard. Cadmium based stabilisers, and re -work material used in manufacture will not be accepted. The profile will be vent profile manufactured with a euro- groove. All profiles are to be chamfered.

Construction

357 All sidelights, fanlights, door frames etc., shall be of all welded construction. All corner joints, transoms and mullions are to be mitred, and fusion welded. All excess materials are to be neatly trimmed and feature grooved. Mechanically jointed transoms may be considered where there are specific design constraints, but only after approval from the Client's Representative. All feature grooves should be straight and of consistent depth throughout their length.

358 Each sidelight, fanlight, door frame etc., shall be permanently marked in an unobtrusive position (not visible when the opening light is closed) with applicable Standard, the weather tightness exposure category and the name or trade mark of the manufacturer.

359 Reinforcement is to be continuous to a minimum of 85% of the length of the frame, and within 5mm of the weld. Screw fixed to the profile at 250 mm max c/c, with a minimum of three fixings. All reinforcement to be to the profile manufacturer's current recommended parameters in either aluminium or galvanised steel.

360 All sidelights, fanlights, door frames etc., will be constructed with the profile manufacturer's current guide lines for pressure equalisation. Face drainage is to be provided; however drainage slots should be a minimum 30mm long and 5mm wide. Internal drainage slots should be offset by a minimum of 50mm from external slots.

361 The sidelights, fanlights, door frames etc., are to be internally beaded as recommended in the current profile manufacturer's manual, and be capable of accepting 24mm hermetically sealed "low emissivity" glass units.

Installation

362 The correct installation of GRP sidelights and door frames is critical to achieve maximum performance.

363 Installation shall at all times meet the requirements of BPF/GGF code of practice for the survey and installation of white high impact modified windows (Ref: COP3, parts A&B). The requirement for through frame fixing, cleat fixing and the need for frame extensions will be discussed at appropriate times. The Provider should draw these details to the Client's Representative's attention.

364 All sidelights etc., are to be glazed from the inside of the building. Glazing systems shall be designed so that the glass cannot be removed from the outside by the use of a thin blade or other simple tool or tools.

365 All fasteners used for the installation of GRP door frames, sidelights etc and doors, must meet the following specification:-

- Fastener is to be a nylon through frame type with twist proof vanes to ensure mechanical stability and prevent anchor rotation;
- To ensure stress free attachment to the masonry structure and to prevent twisting, racking or distortion of the frame, the anchor body will expand radially along its full length during installation. Fasteners relying on a cone and expanding sleeve are not acceptable due to the increased risk of frame distortion;
- The fastener when installed will be fully concealed within the frame to ensure that the fastener remains tamper proof and secure;
- Maximum distances between fasteners will not be more than 600mm and the minimum distance of fasteners from frame corners, transom or mullion joints will be 150mm; and

366 The Provider is to ensure the final securing of fixings are screw tightened (not hammered) to avoid possible splitting of the frame. Any splitting of frames will result in the entire door set having to be removed, re-framed and replaced at the no extra expense to the Client.

Glazing

367 Glazing should be to Building Regulations Approved Document N and to applicable Standard. In addition manufacturer's recommendations for positioning of glazing blocks and packers must be adhered to.

368 Glass to all screens and windows will be hermetically sealed double glazed low emissivity units to applicable Standards, units to be fitted in accordance with manufacturer's technical data sheet. Glass to be marked with appropriate labelling which will only be removed after handover is completed.

369 Double glazed units are to be manufactured to the following specification 4mm Float Glass - 20mm Argon Gas fill - 4mm low emmissivity glass overall thickness 28mm. Glass thickness and type shall be selected using the recommendations given in the applicable Standard to withstand the calculated design wind pressure relative to the size of pane.

370 All glazing to screens and adjacent windows must have at least one pane of laminated safety glass to applicable Standard and marked accordingly. Safety glass shall be fitted where required in accordance with Building Regulations Approved Document N.

371 If any panels have any fixtures/fitting etc. attached, they are to contain a ply reinforcement.

372 Obscure glass to be Cotswold pattern or an obscure pattern of level 5 as a minimum.

Hardware Specification for Fanlights and Sidelights

373 Openings in the fanlights/sidelights should in the first instance be avoided, as it presents a higher risk of unauthorised door entry. However, it may be deemed necessary to provide the room/inner space with an adequate amount of ventilation (see Building Regulations). In these instances, all ironmongery must be as window specification detailed elsewhere. In addition, restrictors must be concealed and tamper-proof from outside the property.

374 The fanlight/sidelight hardware package must meet the requirements of PAS 24 "Enhanced security performance requirements for door-sets and windows in the UK. External door-sets and windows intended to offer a level of security suitable for dwellings and other buildings exposed to comparable risk"

Insulated Panels

375 On full floor to head height frames, lower panels will be coloured insulated panels to match door panelling. Therefore, the panel's overall thickness and Materials to be used will be determined by the doors PAS 24 certification. All panels will achieve a min thermal resistance equal to or better than the glazed area above.

376 All panels to be manufactured to meet all relevant Building Regulations and safety standards with regard to thermal performance, acoustic transmission, and fire protection

Covers, Trims and Mouldings

377 Unless otherwise Instructed all internal heads, jambs, and sills will be finished with a (colour as windows) single bull-nosed PVC-u trim typically 5–7mm maximum thickness of not greater width than 100mm. Scribed, mitred, securely screwed and capped and the edge glued to the frame with a PVC-u cyanoacrylate adhesive to give a neat finish and sealed on all edges using an emulsion acrylic sealant.

378 All PVC-U extrusions, mouldings, trims and profiles to windows will be manufactured and installed so that no colour variation exists to the detriment of the aesthetic value of the windows, doors etc. In accordance with colour fastness test methods included in the applicable Standard.

379 Trims are not to be used to simply provide or enhance the weather tightness of the window or any perimeter joints. Finishing trims shall be used to neaten the interface between frames and opening, they are only to be used in conjunction with the "plaster-patching" / making good situations. As it is likely that cold bridging may occur, filling at reveals, heads and sills must be plastered prior to fitting of all trims.

380 The inclusion of a finishing trim to existing reveals and sill may in certain circumstances create an issue around the re-fitting of Customer's blinds etc. The window installer shall pay due regard to the existing window dressing(s) and where finishing trims are required that a "slim-line" version (5mm or less) is used.

Sealants and Perimeter Pointing

381 All external sealants are to be of low modulus silicone and conform to the applicable Standard and used to seal gaps between window/door assembly and brickwork/plasterwork. Colour matched to windows and neatly executed.

382 Internal sealant to be a one-part flexible emulsion acrylic sealant. This sealant may be used to fill cracks or gaps around walls and ceilings, and around all finished PVC-u architraves and trims.

Ventilation

383 All openings to be fitted with room ventilation as per window specification detailed elsewhere.

384 If required the Provider is to supply and fit a ventilator, which will conform to Gas regulations and applicable Standard, for air supply to gas appliances. This applies to any room containing, or used to vent these types of appliances. Type position and quantity of ventilators to be agreed and verified with the Client's Representative prior to work commencing.

385 An appropriate "**DO NOT OBSTRUCT"** label approved by the Client's Representative indicating boiler rating, must be fitted to all gas ventilators by the manufacturer.

Completion

386 On completion of all Works thoroughly clean all adjacent surfaces affected by the Works.

387 All builders rubbish both internally and externally must be removed during and on completion of the Works.

Client's current manufacturers/suppliers/products

390 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

FIRE DOOR-SETS
[LOWER TIER – Client to delete if not applicable]

FIRE DOOR-SETS

GENERAL REQUIREMENTS ON FIRE DOOR-SETS

Scheme Type	Door Replacement	Colours/Choices
Internal Flat Entrance door-sets	Timber Veneer flush faced FD30s/FD60s door-set in accordance with Fire Safety Law and applicable Standards Door thickness 44mm and 54mm	Colours to be chosen by Client's Representative and Customers. *Locking system – Client's Representative will Instruct whether to retain the existing *locking system or to replace with a new locking system
Internal Communal door-sets	Timber Veneer FD30s/FD60s door-set in accordance with Fire Safety Law and applicable Standards	Colours to be chosen by Client's Representative and Customers. *Locking system – Client's Representative will Instruct whether to retain the existing *locking system or to replace with a new locking system
Internal Cupboard door-sets	Timber Veneer FD30s/FD60s door-set in accordance with Fire Safety Law and applicable Standards	Colours to be chosen by Client's Representative and Customers. **All new doors MUST match all other existing or proposed new doors throughout the scheme.** Client's Representative will Instruct whether to retain the existing *locking system or to replace with a new locking system
External Flat Entrance door-sets	Composite FD30s/FD60s door-set in accordance with Fire Safety Law and applicable Standards	Colours to be chosen by Client's Representative and Customers. *Locking system – Client's Representative will Instruct whether to retain the existing *locking system or to replace with a new locking system
Combination of Internal & External Flat door-sets	Composite FD30s/FD60s door-set in accordance with Fire Safety Law and applicable Standards	Colours to be chosen by Client's Representative and Customers. *Locking system – Client's Representative will Instruct whether to retain the existing *locking system or to replace with a new locking system

Internal Flat Entrance Door-sets

401 Timber veneer FD30s/FD60s door-set, set within timber or aluminium frames in accordance with Fire Safety Law and applicable Standards to provide fire resistance ratings of 30 minutes (or better) and 60 minutes (or better) when tested in accordance with the applicable Standards.

402 All Materials to have achieved Certifire certification to 30/60 minutes fire resistance, or to have been tested in accordance with the appropriate section of the applicable Standards and all door components must comply with Approved Document B of the Building Regulations. All to be installed in strict accordance with manufacturer's technical data sheet with certificate obtained by the Provider at practical completion.

403 Please note: If the existing doors are glazed, the Provider must conduct a survey with the Customers to see whether they wish to retain the glazing or have replacement solid doors. Where possible, the Client would like to prevent glass from being installed due to security risks, fire safety and thermal efficiencies.

404 All doors must include the following elements (if not included with the door-set):

Combine 15 x 4mm intumescent /brush smoke seals to both side edges and top edge of door leaf Successfully tested for fire and smoke performance in accordance with the applicable Standards
Overhead door closing mechanism affixed to the **external** side of the door in accordance with applicable Standards.
75mm/3" Eurospec Fire rated door numerals in satin anodised aluminium finish.
Average size 285mm x 55mm fire and smoke resistant letter plate with Telescopic intumescent liner and Nylon brush seals fitted to prevent vision through the letterplate and provide draught proofing, complete with a security cowl is available to prevent vision through the letterplate when open, and to inhibit manipulation of locks and bolts. In accordance with the applicable Standard and Approved Document B of the Building Regulations.
Complete viewing angle 60 degrees fire rated door viewer with a prism system that allows viewing from up to 2m away. Fire protection is provided by intumescent strip and suitable for 35mm - 62mm thickness doors. One per door, Two to be provided for wheelchair users.
1½ pairs Eurospec Grade 13 ball bearing fire rated hinges manufactured from 304 grade stainless steel, CE marked, designed and tested for 44mm doors.
Locking assembly and door handle ironmongery – Thumb turn on the internal face.
Fire Safety Signage to comply with the applicable Standard for Fire safety signs, notices and graphic symbols and the Health and Safety (Safety Signs and Signals) Regulations 1996 and where applicable conform to applicable Standards.

Communal Internal Door-sets

405 Timber veneer FD30s/FD60s door-set with clear fire resisting glazing panels set within timber or aluminium frames in accordance with Fire Safety Law and applicable Standards to provide fire resistance ratings of 30 minutes (or better) and 60 minutes (or better) when tested in accordance with applicable Standards

406 All Materials to have achieved Certifire certification to 30/60 minutes fire resistance, or to have been tested in accordance with the the applicable Standards. All door components must comply with Approved Document B of the Building Regulations. All to be installed in strict accordance with manufacturers technical data sheet with certificate obtained by Provider at practical completion.

407 All doors must include the following elements (if not included with the door-set):

Combine 15 x 4mm intumescent /brush smoke seals to both side edges and top edge of each door leaf Successfully tested for fire and smoke performance in accordance with the applicable Standards
Overhead door closing mechanism affixed to the **external** side of the door in accordance with applicable Standard.
1½ pair Eurospec Grade 13 ball bearing fire rated hinges manufactured from 304 grade stainless steel, CE marked, designed and tested for 44mm doors to each door leaf.
Fire Safety Signage to comply with applicable Standard for Fire safety signs, notices and graphic symbols and the Health and Safety (Safety Signs and Signals) Regulations 1996 and where applicable conform to applicable Standards.
Eurospec plain or Push/Pull engraved Fire door rated finger plates to each door leaf.
Eurospec D pull Handle - A versatile range of pull handles in various bar diameters and lengths to each door leaf.
Eurospec kicking plate to both faces of each door leaf.
Electromagnetic fire door retainers (hold open devices) can be used to hold a self-closing fire door in the open position with an electrically powered magnet. These devices are usually linked into a building's fire alarm system or are controlled from locally positioned smoke detectors. Or Acoustic fire door retainers fitted at the bottom of fire doors and can lock a fire door in the open position by pushing a plunger down. The acoustic fire door retainers then 'listen' for the sound of smoke alarms. Door release mechanism should conform to applicable Standard for electronically powered hold-open devices.

408 **Internal Cupboard Door-sets** (Electric cupboards, meter cupboards, boiler cupboards, storage rooms, cleaning cupboards & Lift rooms etc.).

409 Timber veneer FD30s/FD60s door-set set within timber or aluminium frames in accordance with Fire Safety Law and applicable Standards to provide fire resistance ratings of 30 minutes (or better) and 60 minutes (or better) when tested in accordance with applicable Standards.

410 All Materials to have achieved Certifire certification to 30/60 minutes fire resistance, or to have been tested in accordance with the applicable Standards. All door components must comply with Approved Document B of the Building Regulations. All to be installed in strict accordance with manufacturers technical data sheet with certificate obtained by Provider at practical completion.

411 All doors must include the following elements (if not included with the door-set):

Combined 15 x 4mm intumescent /brush smoke seals to both side edges and top edge of door leaf Successfully tested for fire and smoke performance in accordance with applicable Standards
Cam action overhead door closing mechanism affixed to the **external** side of the door in accordance with applicable Standard.
1½ pair Eurospec Grade 13 ball bearing fire rated hinges manufactured from 304 grade stainless steel, CE marked, designed and tested for 44mm doors.
Locking assembly and door handle ironmongery – Thumb turn on the internal face.
Fire Safety Signage to comply with applicable Standard for Fire safety signs, notices and graphic symbols and the Health and Safety (Safety Signs and Signals) Regulations 1996 and where applicable conform to applicable Standard.

External Flat Entrance door-sets

412 Complete FD30S Composite fire door-set set within timber or aluminium frames and flush finished with a fire resistant glass reinforced plastic textured finish. Fire Resistant insulated core which has a leaf thickness of 44mm in accordance with Fire Safety Law and applicable Standards, to provide fire resistance ratings of 30 minutes (or better) when tested in accordance with applicable Standards

413 All Materials to have achieved Certifire certification to 30/60 minutes fire resistance, or to have been tested in accordance with the appropriate section of applicable Standards and all door components must comply with Approved Document B of the Building Regulations. All to be installed in strict accordance with manufacturer's written instructions with certificate obtained by Provider at practical completion.

414 Please note: If the existing doors are glazed, the Provider must conduct a survey with the Customers to see whether they wish to retain the glazing or have replacement solid doors. Where possible, the Client would like to prevent glass from being installed due to security risks, fire safety and thermal efficiencies.

415 All doors must include the following elements (if not included with the door-set):

Combine 15 x 4mm intumescent /brush smoke seals to both side edges and top edge of door leaf Successfully tested for fire and smoke performance in accordance with applicable Standards
Cam action overhead door closing mechanism affixed to side of the door in accordance with applicable Standards
75mm/3" Eurospec Fire rated door numerals in satin anodised aluminium finish.
Average size 285mm x 55mm fire and smoke resistant letter plate with Telescopic intumescent liner and Nylon brush seals fitted to prevent vision through the letterplate and provide draught proofing, complete with a security cowl is available to prevent vision through the letterplate when open, and to inhibit manipulation of locks and bolts. In accordance with the applicable Standard and Approved Document B of the Building Regulations.
Complete viewing angle 60 degrees fire rated door viewer with a prism system that allows viewing from up to 2m away. Fire protection is provided by intumescent strip and suitable for 35mm - 62mm thickness doors. One per door, Two to be provided for wheelchair users.

2 pair stainless steel hinges, CE marked, designed and tested for 44mm doors.
Multi-point automatic multi-point locking assembly and lever/lever configuration door handles to suit Euro profile lock cylinder with 3 keys – Thumb turn on the internal face.
Fire Safety Signage to comply with applicable Standard for Fire safety signs, notices and graphic symbols and the Health and Safety (Safety Signs and Signals) Regulations 1996 and where applicable conform to applicable Standard.
Anodised aluminium "low mobility" threshold.
Anodised aluminium weather bar.

Internal and External Flat Entrance Door-sets

416 Complete FD30S **Composite** fire door-set, set within timber or aluminium frames and flush finished with a fire resistant glass reinforced plastic textured finish and Fire Resistant insulated core which has a leaf thickness of 44mm in accordance with Fire Safety Regulations 2017 and the applicable Standard to provide fire resistance ratings of 30 minutes (or better) and 60 minutes (or better) when tested in accordance with the applicable Standards.

417 All Materials to have achieved Certifire certification to 30/60 minutes fire resistance, or to have been tested in accordance with the appropriate section of the applicable Standard. All door components must comply with Approved Document B of the Building Regulations. All to be installed in strict accordance with manufacturers technical data sheet with certificate obtained by Provider at practical completion.

418 Please note: If the existing doors are glazed, the Provider must conduct a survey with the Customers to see whether they wish to retain the glazing or have replacement solid doors. Where possible, the Client would like to prevent glass from being installed due to security risks, fire safety and thermal efficiencies.

419 All doors must include the following elements:

Combine 15 x 4mm intumescent /brush smoke seals to both side edges and top edge of door leaf Successfully tested for fire and smoke performance in accordance with applicable Standards
Cam action overhead door closing mechanism affixed to external side of the door in accordance with applicable Standard.
75mm/3” Eurospec Fire rated door numerals in satin anodised aluminium finish.
Average size 285mm x 55mm fire and smoke resistant letter plate with Telescopic intumescent liner and Nylon brush seals fitted to prevent vision through the letterplate and provide draught proofing, complete with a security cowl is available to prevent vision through the letterplate when open, and to inhibit manipulation of locks and bolts. In accordance with the applicable Standard and Approved Document B of the Building Regulations.
Complete viewing angle 60 degrees fire rated door viewer with a prism system that allows viewing from up to 2m away. Fire protection is provided by intumescent strip and suitable for 35mm - 62mm thickness doors. One per door, Two viewers are to be provided for wheelchair users.

2 pair stainless steel hinges, CE marked, designed and tested for 44mm doors.
Multi-point automatic multi-point locking assembly and lever/lever configuration door handles to suit Euro profile lock cylinder with 3 keys – Thumb turn on the internal face.
Fire Safety Signage to comply with applicable Standard for Fire safety signs, notices and graphic symbols and the Health and Safety (Safety Signs and Signals) Regulations 1996 and where applicable conform to EN ISO 7010.
Anodised aluminium "low mobility" threshold.
Anodised aluminium weather bar.

420 Fire Door manufacturers and suppliers must provide, as a minimum, evidence of testing relating to the following:
Accreditation to and compliance with:

- UKAS Accredited Fire Testing Laboratory Detailed Report, typically known as a Global Fire Resistance Assessment
- Fire Testing in accordance with relevant applicable Standards for Fire Doors etc.,

Compliance (as far as reasonably practicable) with Statutory Requirements:

- Building Regulations
- Fire Safety and associated Technical Booklet Guidance
- the applicable Standard for Fire Safety in the Design, Management and Use of Residential Buildings – Code of Practice

421 Composite fire door-set manufacturers/suppliers, must at all times demonstrate compliance with the standard specification requirements in terms of certification (and validity of same), product compliance etc.

422 The manufacturer/supplier of fire door-sets will be required to submit the following evidence directly to the Client's Representative. This will be held solely by the Client as evidence of accredited fire performance, technical specification and particular features –

- A Global Fire Resistance Performance Assessment Report for the respective composite fire door-set arrangement from a UKAS accredited fire testing laboratory with definitive confirmation that the composite fire door-set when tested to destruction achieves well in excess of the required 30 minutes

- This to account for a series of glazing options including the addition of glazed top-lights or side-lights within prescribed dimensions. All other components such as hinges, multi-point locking devices, etc., must be fire-rated and hence part of this assessment. The manufacturer/supplier may elect to have a number of the same component, but from different suppliers tested and the outcome reflected in this report.

- A composite fire door-set Installation and Procedure Manual specific to the product. This document is for the sole use of the Provider/Installer who warrants through a Certificate of Conformity that the Fire Door-set exhibits no compromise whatsoever prior to and post its installation.

- Training is undertaken directly by the manufacturer/supplier of the composite fire door-set on their product and installation manual to the Provider in the installation of these door-sets.

- A Manufacturer/Supplier Certificate of Conformity to be issued with delivery of each manufactured fire door-set listing the unique job reference and all of the secondary components (fire-rated letter-plate, eye viewer etc.,)

- A Manufacturer/Supplier Fire Door-set Monthly Report that records the composite fire door-sets as manufactured. This to be issued to the Client's Representative in a tabular/PDF format on a monthly basis.

Marking of Fire Door-Sets

423 All fire door-sets supplied to the Client should be clearly and permanently marked with their declared fire resistance at the manufacture stage. This will be in the form of a circular metallic tag. It must bear the manufacturer's name and contact details.

424 The door-set must, in addition, carry a unique job reference number on the upper RH edge of the door leaf, which, in turn, must relate to the specific Fire Door Certificate issued with the door-set.

425 Fire-resisting glass were installed as part of the fire door-sets must be identified with an appropriate designation mark. The mark on the glass must be permanent, legible and completely visible after glazing installation. Similarly, this should include as a minimum, the glass manufacturer's name and the product name.

426 **The Specifying of Fire Door-Sets**

Fire Door-sets are to be available in both FD30s and FD60s configurations. The specification for a fire door-set must include a full description of the elements together with the required fire resistance. Typically this should reflect critical issues such as –

- the overall size of the door-set
- the proposed mode of operation
- size and number of any glazed apertures
- details of any hardware
- frame details and material being used
- the presence of any top or side-light glazed panels
- requirement in terms of performance seals

Door Leaves and Frames

427 All fire door-sets must be purchased as complete door-sets. This ensures that all of the correct components are fitted and that full assembly instructions are available through the manufacturer.

428 Door Leaves are to be constructed from composite materials and be "single swing". The "as installed" door-sets must reflect those features contained in the manufacturers **Global Fire Resistance Assessment Report**.

429 Door frames can be provided (subject to above assessment reports) in hardwood, aluminium or steel. The frame of the door-set should provide support for the door leaf in a "cold state", but also provide adequate support in a fully developed fire. The minimum dimensions for the frame cross- section will be stated in the manufacturer's fire door-set assessment report.

430 The timber and metal (aluminium or steel) door frames in terms of their density, dimensions and material should not be less than those tested and recorded within the manufacturers **Global Fire Resistance Assessment Report**

Intumescent Fire and Smoke Seals

431 The intumescent fire and smoke seals used in the fire door-sets must be of the same formulation, dimensions and configuration as that stated in the manufacturers **Global Fire Resistance Assessment Report.**

432 These seals must achieve their optimum performance when fitted in the frame of the single leaf, single swing Fire Door-sets. These are normally positioned by the manufacturer at the mid point of the door leaf thickness.

433 Fire door-sets are required under Building Regulations to restrict the flow of ambient temperature smoke – all Fire Door-sets, therefore, supplied to the Client must be identified by the suffix "s" – for example, FD30s and fitted with smoke seals.

434 Painting of smoke seals or combined intumescent and smoke seals is not permissible as this may inhibit the door-set from latching correctly.

Glazing Apertures

435 Fire door-sets as supplied to the Client may have glazed apertures. The door-sets must be designed to receive glazed apertures and fitted into the fire door-set aperture under the strict control of the manufacturer. Under no circumstances must apertures be cut on site.

436 The position, number and area of glazed apertures must be the same as that tested as part of the manufacturers **Global Fire Resistance Assessment Report.**

437 Only completely tested glazing systems must be used and the manufacturer must identify the glass product type, thickness, glazing seals and beads and any fixings. These must be fully supported by the relevant test evidence.

Fire Door-Set Hardware

438 Intumescent materials that have been used to achieve a particular performance in the fire test conditions, with the relevant hardware and the door leaf must be reflected in the completed Fire Door-set to maintain the stated fire performance.

439 It is essential that any element of hardware incorporated as part of the composite fire door-sets provides the required intumescent protection. It is recommended in most cases that the hardware is bedded in an intumescent mastic or intumescent pads to restrict heat transfer to the door edge by means of the metal hardware products.

440 All hardware/door-set furniture must be fitted in a manner that ensures the fire-resisting properties of the door-set are not compromised.

441 Intumescent and fire-rated letter plates and fire-rated eye viewers are a particular requirement of fire door-sets. These must be fitted with an intumescent liner and only fitted where they have achieved the appropriate fire resistance period when tested in-situ with the composite fire door-set.

Finish/Decoration to Fire Door-Sets

442 Fire door-sets are generally not required to provide a specific spread of flame classification.

443 All fire door leaves supplied as part of the composite fire door-set are pre- coloured GRP skins that do not require any form of decoration. Similarly those fire door-sets utilising the aluminium framing system require no form of decoration as these are "powder coated".

444 Where there is a hardwood frame as part of a composite fire door-set, particular care must be taken where there may be future re-decoration. The use of heat or chemical strippers must be avoided at all costs as these are liable to damage intumescent fire and smoke seals incorporated within the frame.

Sample Fire Door-Sets for Approval

445 Sample fire door-sets must be delivered to site by the Provider/manufacturer/supplier for inspection and acceptance by the Client's Representative.

446 The Provider/manufacturer/supplier in providing the sample for acceptance must demonstrate full compliance with the Specification requirements. Evidence of full compliance with the standard specification requirements and a copy of the relevant test data/**Global Fire Resistance Assessment Report** must be held in advance by Client.

Protection, Transportation, Storage and Pre Installation Check of Fire Door-Sets

447 The Provider/manufacturer/supplier of the fire door-sets shall be responsible for ensuring they are suitably protected to avoid damage during transportation and subsequent storage.

448 Fire door-sets shall not be flat-packed, but stood vertically during transportation.

449 Fire door-sets in storage to be "kept apart" with preferably soft packing.

449 The Provider/manufacturer/supplier of fire door-sets may choose to disengage the over-head door closer for transportation purposes. This is a critical component and part of the fire door-set and must be re-engaged by the Provider prior to any installation.

450 The Provider must ensure that all fire door-sets stored on site are housed within a weatherproof on-site storage facility and protected at all times from moisture and temperature extremes. This should preferably be a well ventilated facility.

451 Prior to commencement of installation, the Provider must undertake the following checks:

- Consult the manufacturer/supplier survey sheets and ensure these are correct and clear
- All definitive survey measurements are recorded
- The fire door-sets as supplied are of the correct fenestration and design
- All hardware components are intact and engaged (where required)

452 All Fire Door-sets are generally measured in accordance with **the applicable Standards** and as recommended on the **GGF (Glass & Glazing Federation) Code of Practice (March 2006)**. Fire Door-sets will in the main be fitted from the inside, although the nature of some reveals will permit these to be fitted from the outside. The measurement and fitting of fire door-sets must in every case respect the existing cover/rebate to the outer frame of the fire door-sets by virtue of the "reverse brick detail" or "check reveal".

Compatibility of Fire Door-set Framing with Surrounding Structure

453 The type of the surrounding structure and / or the wall or partition into which the fire door-set is being installed will have been determined by the fire resistance testing and within the **Global Fire Resistance Assessment** Report. Reference must be made to the manufacturer / supplier for each common area and verified by test evidence.

Installation of Fire Door-sets

454 Installation Generally

- All fire door-sets to be installed must pay due regard to the following –
  - Fire door-set manufacturer/supplier Installation technical data sheets
  - Installation of fire door-sets
  - Compatibility of door-set arrangement (and in particular, the door frame) with the surrounding structure
  - Sealing between the door-set and the surrounding structure
  - Clearance gaps
  - Under-door (threshold gaps)

455 Where the fire door-sets are installed by a Provider, the following protocol must operate:

- The Provider must identify "skilled Installers" to the Client's Representative who will be employed in their installation;
- The "skilled installers" must have undertaken certified training and be classed as an approved person meeting the requirements of the BM TRADA scheme for Q-Mark Fire Door Installation to STD052 or other equal and approved standard;
- The Provider must similarly be registered as meeting the requirements of the BM TRADA scheme for Q-Mark Fire Door Installation to STD052 or other equal and approved standard, a copy of the certificate of registration is to be provided to the Client's Representative before any Fire Doors or Door-sets are installed;
- The Provider must organise with the fire door-set manufacturer/supplier, specific training on all aspects of the door-set and importantly the installation technical data sheet;
- The manufacturer/supplier of the fire door-sets must maintain a record of all training given and must be made available for inspection by the Client's Representative, as and when required.
- The manufacturer/supplier of the fire door-sets will issue "all persons attending" with a bespoke certificate as proof that training in their respective product has taken place.

456 **Install the fire door-sets in strict accordance with the installation technical data sheets and ensure that there is adequate sealing with the surrounding structure and that damage is limited (or avoided) with any flame retardant coatings.**

457 Under no circumstances must the fire door-set arrangement (as supplied) be compromised in the fitting/installation process. This includes making on-site adjustments to key fire-rated components such as "building hardware" with intumescent fire protection.

458 In all cases the fire door-set manufacturer/supplier is at liberty to undertake random checks to ensure that their fire door-set arrangement has not been compromised in any way. Where a manufacturer/supplier is of the opinion that any of their fire door-sets have been compromised, this must be referred immediately to the Client's Representative for action.

459 Installation Criteria:

- Fire door-sets must be installed plumb and square within the structural aperture, without twist, racking or distortion of any member and in accordance with the manufacturer/supplier recommended and permissible tolerances so as to operate correctly after installation;
- It is critical that the manufacturer/suppliers correct and preferred method of installation is fully complied with to ensure that the door-set, when fixed into the wall, will achieve the required fire rating designated for the respective door opening;
- In order to maintain the fire resistance of the compartment walling when fitted with a fire door-set arrangement, the junction between the two elements must be adequately sealed.
- The sealing of these junctions must be in strict accordance with the manufacturer / supplier Installation technical data sheets.

- The composite fire door leaf must be hung to give an equal gap across the heads and down both jambs. To ensure good fire performance and under fire test conditions; this may be in the order of 2 – 4mm;
- The combined intumescent fire and smoke seals (as required and fitted) must allow the door-set to operate without causing significant "frictional issues", and the gap must remain within the "as tested" tolerances;
- The under door/threshold gaps should be pre-determined by the fire door-set manufacturer/supplier and be in accordance with their Installation technical data sheet for the particular fire door-set;
- When fitted, the fixed or threshold arrangements or the drop- down seal variant should give an "even contact" with the floor, but not create/exhibit significant "frictional issues" that could interfere with the closing action/latching of the fire door-set

Methods of Fixing for Fire Door-sets

460 **Fixing Fire Door-sets Generally**

- Fixings for fire door-sets must be strictly in accordance with the manufacturer/supplier Installation technical data sheets;
- Fixing methods and distances together with their respective methodology must also be strictly complied in terms of the manufacturer/supplier Installation technical data sheets;

461 **Use of Expanding Polyurethane Foam**

- The use of expanding polyurethane foam is not acceptable as a sole method of fixing any fire door-set into a structural opening;
- Where the installation of the fire door-set with the adjacent wall substrate may require an element of expanding polyurethane foam, this "foam filling" must be referred initially to the manufacturer/supplier for verification/approval. Where the manufacturer/supplier Installation technical data sheet permit this or make reference to its use, this must be applied strictly in accordance with that stated;
- Where expanding polyurethane foam is used, subject to manufacturer's recommendations, it must not be used to fill gaps exceeding 10mm wide;
- Foam filling must be to the full depth of the frame using only an approved fire resistant expanding polyurethane foam complying with applicable Standards and be of 4 hour fire performance rating for Building Regulations compliance

Finishing Off and Making Good

462 The final covering and treatment of adjacent surfaces, substrates, and their intersections are key in the overall fire door-set installation process.

463 The primary objectives of making good any damaged areas adjacent to the fire door-sets is to:

- Maintain the fire resistance of a fire-resisting or compartment wall
- Ensure the junction between the two elements are adequately and appropriately sealed
- Maintain the required Surface Spread of Flame Classification (Class 0) linked to the Flame Retardant Coatings
- Plaster-Patching
    - A small degree of plaster-patching will be required from the installation process. This will in all probability relate to reveals immediately adjacent to fire door-set.

- Finishing Trims
    - In a small number of cases, the gap between the door frame and the wall frame may be masked by an architrave both internally and externally. In the main, it is expected that the door frame will be fixed directly to the substrate.
    - Where the former occurs, this should be referred initially to the fire door-set manufacturer/supplier for verification that this type of surrounding structure was determined by the fire resistance test. Additional protection can be facilitated as below.

- Frame to Wall Junction & Adjacent Flame Retardant Paint Coatings
    - Where the surface of the adjacent walling is identified as being plastered over to back of the frame, then there is no real problem with the exception of disturbance to any applied wall applied paint applications – in many cases, these paint applications will be multiple coatings and potentially in a flame retardant paint.
    - Where there is disturbance of such surface linings, the Provider must refer to his paint suppliers for advice and sampling (if required). It is recognised that wall linings disturbed and in a fully developed fire can compromise the common area.
    - Where architraves / adjacent panels are present, these should be removed to check that no voids exist between the frame and the adjoining structure.
    - If the above scenario is found, the fire door-set manufacturer/supplier should be consulted as stated. As a form of additional protection, the void(s) should be filled with plaster, intumescent material or tightly packed rock-wool. The method of packing will depend on the size of the void – guidance on filling voids satisfactorily is stated in the applicable Standard.
    - Where fire Door-sets are installed and any damage of the adjacent wall surfaces sustained, then a visual inspection should take place and identification made of the "applied paint" – it is expected, for example, within common areas that any of the following paint applications may exist:
        - Flame Retardant Paint
        - Emulsion
        - Solvent-based Gloss
        - Solvent-based Egg-shell
        - Textured Coatings
    - If there is any element of doubt as to the above application, then referral should made to his paint manufacturer for technical advice. This is particularly critical if the topmost paint layering is of a flame retardant paint.
    - There are fire hazards associated with multi-layer paint coatings
    - The common area paint linings and forming part of compartment walling must ultimately achieve a Class 0 Surface Spread of Flame classification. That is readily achievable normally through an "upgrade process" and specification involving flame retardant paints from the Provider's paint manufacturer.

Fire Door-set Inspection Checklist

464 A **FIRE DOOR-SET INSPECTION CHECKLIST** requires to be completed where any fire door-set is installed as part of this Contract.

465 Each Fire Door-set **must** be individually, independently inspected by a UKAS accredited fire door installation inspector in relation to all issues listed. This information will be critical in maintaining a "level of fire resistance" within the common areas.

466 The Inspection Checklist is to give the Client an assurance that the door-set has been independently observed and inspected as installed and that any deficiencies based on the checklist issues have been noted and recorded. The inspector is required to record and advise the Provider of any such deficiencies.

467 The inspection, recording and completion of this Checklist is the responsibility and cost of the Provider. Photographs may be used where necessary as evidence of any significant deficiencies.

468 Ensure that any deficiencies identified are remedied without delay.

469 Upon completion of any remedial works must sign and issue the Provider's Certificate of Conformity for each Fire Door-set.

Protocol – Certification of Fire Door-Sets

Certification Generally

470 Fire Door-sets as supplied to the Client must be "certified" as fit for purpose and capable of achieving the fire resistance and integrity as stated.

471 Demonstrate compliance with this Specification**.**

472 **Manufacturer/Supplier Certification and Compliance**

- **Any Manufacturer/Supplier of Fire Door-sets are required to undertake the following:**
    - Tag every Fire Door-set with a round metallic tag affixed to the door leaf with security screws; this must state "FD30s or FD60s" and the respective Manufacturer's name and contact number.
    - The upper RHS of the Fire Door leaf must bear the unique manufacture job reference assigned to the respective Flat/Maisonette address or communal location – this must relate directly to the MANUFACTURER/SUPPLIER CERTICATE OF CONFORMITY and also be logged to the MONTHLY FIRE DOOR-SET REPORT
    - The MANUFACTURER/SUPPLIER CERTIFICATE OF CONFORMITY must be made available with every Fire Door-set and record the following details:
        - Project/Scheme name & corresponding Project No.
        - Door-set Manufacturer/Supplier details
        - Manufacturer/Supplier job reference
        - Contractor supply details
        - Completed Certificate of Conformity Statement
        - Product Supplied Address
        - Product Details
    - The relevant Certificate of Conformity template is included below:
    - A MANUFACTURER/SUPPLIER MONTHLY FIRE DOOR-SET REPORT format and content to be approved by the Client's Representative must be submitted to the Client's Representative on a monthly basis fully completed as confirmation of all fire door- set locations as supplied in the preceding month. This report must cross-reference with all of the Certificates of Conformity issued.

Installer Certification and Compliance

473 **The Provider required to undertake the following:**

- Undertake all remedial works/deficiencies as identified on the Fire Door-set inspector checklist, format and content to be agreed with the Client's Representative.
- Warrant that the Fire Door-set as installed has been supplied from a fire door-set manufacturer who holds a current and valid Global Fire Resistance Assessment Report; in addition, the Provider is to warrant that the fire door-set Installation (and any identified deficiencies have been undertaken in strict compliance with the manufacturer/supplier installation technical data sheets and with the Client's Specification and that no compromise of any fire safety component exists.

474 The relevant INSTALLER CERTIFICATE OF CONFORMITY template is to be provided by the Client to the Provider.

Client's current manufacturers/suppliers/products

475 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

PRE-FINISHED TIMBER EXTERNAL DOOR SETS AND SCREENS
[LOWER TIER – Client to delete if not applicable]

PRE-FINISHED TIMBER EXTERNAL DOOR SETS AND SCREENS

Timber Doors

501 This Section is to be read in conjunction with the general specification for 'Replacement Windows and External Doors – Surveying and Installation' and 'Replacement External Doors – General'.

502 All new pre-finished timber doors shall be purpose made pre-treated timber double glazed doors, manufactured to the applicable Standard.

503 Where required lower panels shall be laminated safety glass or 25mm hardwood raised and fielded panels as appropriate. **Plywood panels shall not be accepted.**

504 Hardwood or aluminium glazing beads incorporating an integral EDPM corded lipped gasket shall be fitted to the external face. **The bead type and colour shall be agreed with the Client's Representative.**

505 All aluminium glazing beads shall be secured with bead retention clips as standard. Pre-finished hardwood glazing beads shall be fixed either by secret nailing using stainless steel or copper pins or by stainless steel large headed pins. When pinning with stainless steel large headed pins care shall be taken to ensure that splitting, head indentation of the glazing bead or breaking of the paint surface by the head does not occur. Bead retention clips may also be used for the securing of hardwood glazing beads.

506 All pre-finished door-sets shall be delivered to site totally completed including full coating system, this shall be either opaque or translucent, solvent based or water borne, fully glazed and with all furniture fitted leaving only the need to fix into the prepared opening on site. Note: Projecting furniture i.e. handles, may be supplied unfitted to avoid damage during transit.

507 All workmanship to be to applicable Standard.

508 Timber for use in all doors shall be selected hardwood and in the density range of 650kg/m cu. Doors may be flush fitting or rebated over frame.

509 Flush fitting doors shall have a minimum thickness of 44mm.

510 Rebated doors shall have a minimum thickness of 57 mm.

511 Timber for doorframes shall be selected hardwood and in the density range of 650kg/m cu.

512 All external edges shall have a radius of not less than 1.5mm and not greater than 3.00mm in accordance with Paint Manufacturers technical data sheet.

Note: It is acceptable for this detail to 'run through' all joint lines.

513 Surface waves caused by machining or excessive sanding will not be accepted.

514 All frames, mullions, transoms etc., to be to quality standard of the applicable Standard.

515 Timber doors to be set in rebated hardwood frames, and 2XG style pre-primed timber doors with upper panel double glazed with laminated safety glass sealed units.

516 Weatherboards to doors are to be included.

Client's current manufacturers/suppliers/products

517 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

ALUMINIUM EXTERNAL DOORS AND SCREENS
[LOWER TIER – Client to delete if not applicable]

ALUMINIUM EXTERNAL DOORS AND SCREENS

Generally

601 This Section is to be read in conjunction with the general specification for 'Replacement Windows and External Doors – Surveying and Installation' and 'Replacement External Doors – General'.

602 The Works comprise all the necessary Design Work for and the supply and installation of aluminium external doors and screens, with double glazed units to communal staircases and landings.

Design Standards

603 The door system is to comply with the following applicable Standards:

- Glass for glazing – Classification
- Aluminium and aluminium alloys. Extruded rod/bar, tube and profiles. Mechanical properties
- Aluminium alloy windows and doorsets Specification
- Patent glazing and sloping glazing for buildings. Code of practice for design and installation of sloping and vertical patent glazing
- Fire safety in the design, management and use of residential buildings. Code of practice
- Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings
- Glazing for buildings. Code of practice for safety related to human impact
- Performance of windows and doors. Classification for weathertightness and guidance on selection and specification
- Performance of windows and doors. Classification for operation and strength characteristics and guidance on selection and specification
- Specification for powder organic coatings for application and stoving to aluminium alloy extrusions, sheet and preformed sections for external architectural purposes, and for the finish on aluminium alloy extrusions, sheet and preformed sections coated with powder organic coatings
- Corrosion tests in artificial atmospheres. Salt spray tests
- Windows doors and rooflights. Design for safety in use and during cleaning of windows, including door-height windows and roof windows. Code of practice
- Windows and doors. Code of practice for the survey and installation of windows and external doorsets.
- Specification for improved security single hinged residential doorsets.

604 The installation is to comply with all the relevant requirements of Building Regulations Approved Documents.

605 All door openings are to be suitable for wheelchair access in accordance with the Building Regulations Approved Document M (Access to and use of buildings). This means that, with the door open, the clear opening width between the jamb of the frame and the hanging style of the door is to be not less than 800mm.

Materials

606 All framing and swing doors system must be constructed from aluminium 100% recycled and suitable for fire route exits.

607 Screws and internal components must be either stainless steel, A2 cadmium plated steel or other corrosion resistant material.

608 Glazing beads must be aluminium "snap on" type requiring no screws. Dry glazing must be with self-locking plasticised PVC-u gaskets.

Construction

609 Framing assembled from pre-finished lengths of aluminium profile, which are square cut. All horizontal members are secured to verticals by screwing into four integral screw splines. All joints to be sealed against the entry of water. Mid rails into framing are to be secured with frame to rail cleats.

610 Door leaf assembled from finished lengths of aluminium profile, which is square cut. Door rails secured to stiles with pre-machined cleats. All joints to be sealed against entry of water. All external-glazing beads must be secured by mechanical means and tamper proof. Stiles to have double weather-stripping as standard.

Ironmongery

611 Fire exit doors (opening out) (to comply with applicable Standard (Building Hardware. Panic exit devices operated by a horizontal bar, for use on escape routes. Requirements and test methods.))

1 No. Flush Fitting Panic Latch.
1 No. Pull handle in matching polyester RAL coating to outside.
1 No. Door closer.
1 No. Modular escape nightlatch with 70mm backset with suited lock.
1 No. High Security Electric Strike faceplate
Minimum 3 No. finger guard silver anodised butt hinges.

612 Main entrance door:

1 No. Pull handles in matching polyester RAL coating.
1 No. Flush Fitting Panic Latch.
1 No. Low energy swing door operator.
1 No. Modular escape nightlatch with 70mm backset with suited lock.
1 No. High Security Electric Strike faceplate
Minimum 3 no. finger guard silver anodised butt hinges.

Screen Inserts

613 System screen inserts must consist of an outer frame and ventilator frame mitred and mechanically jointed using prepared extruded aluminium corner cleats and stainless steel corner chevrons. All joints must be sealed against the entry of water. Infills are secured by snap in beads internally or externally. Integral mullions/transoms are secured by driving screws into extruded screw ports. Structural coupling mullions and transoms are available to construct larger composite window units. Always refer to the System manufacturer's technical data sheets for limitations on frame and vent size.

Colour Finish

614 All exposed sections of aluminium extrusion are to be powder coated. Unless otherwise specified all powders must comply with the requirements of the applicable Standards and conducted under applicable Standard control conditions. Powder coating application and stoving on aluminium must be carried out in accordance with the applicable Standards.

615 The powder coating must have a Class 1 surface spread of flame rating to applicable Standard.

616 The selected coating must comply with the British Board of Agrément Certificate or equivalent. Colour to be high gloss white.

617 All doors are to be permanently marked in an unobtrusive position (not viable when the opening door is closed) with the name and trademark of the system supplier and fabricator.

618 Units are to be installed by a specialist Subcontractor approved under the terms of the Contract. After installation and glazing, units are to be checked and adjusted as required.

Glass

619 Hermetically sealed 24mm double glazed units with clear glass.

Main entrance door to scheme

620 Electric swing opener to be installed by a specialist Subcontractor approved under the terms of the Contract.

621 The Provider is to liaise with his Subcontractor for the door entry/warden call system to work on door entry system with regard to the following operations:

- Disconnection system before existing door is removed; and
- Connection system after installation of new door is installed to allow Customers and central control to open the door remotely.

Proximity Swipe

622 External doors to be fitted with a proximity swipe system with capability of reading up to 70 key fobs also to be supplied.

Master Keying

623 All new locks are to pass the same key suited to the schemes master suite.

624 Copies of keys are to be issued in the first instance to the Client's Representative.

Installation

Aluminium

625 Installation of fenestration systems must be performed by a Subcontractor approved by the Client's Representative in accordance with shop drawings and pointed with a fire grade silicone/mastic sealant, all as approved by the Client's Representative. After installation and glazing the Provider must check and adjust, if required, all items furnished under this section.

Glass

626 All glazing to be carried out in accordance with the requirements of the Building Regulations. Glass to comply with applicable Standards.

627 Safety glass to comply with applicable Standard with regard to impact performance and the marking of glass to indicate type and classification, and with regard to minimum thickness' for certain pane sizes.

Protection and Cleaning

628 The Provider must be responsible for any damage to the Materials under this section of the Specification incurred by him during installation and must leave the Work in a clean condition. The Provider must be responsible for the protection of these Materials from damage by other trades and must be responsible for the final cleaning of the Work.

Fasteners and Fixings

629 All aluminium units are to be installed in accordance with the manufacturer's installation technical data sheets.

630 Openings should be checked against available drawings or a site survey for correctness and openings should be square and plumb.

631 Fixings grounds at head, sill and jamb must be capable of carrying all imposed and dead loads in a stable condition, i.e. there should be no spalling, fissures or general debris.

632 Expanding polyurethane foam must not be used as a sole method of fixing.

Approved Fabricators

633 If the Provider is not an approved powder coated door and screen manufacturer/contractor, he must sub-contract the work to a fabricator who is capable of being approved by the Client's Representative.

634 When submitting his tender, the Provider must give full details of the proposed system, ironmongery, glazing method etc.

Client's current manufacturers/suppliers/products

635 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

REPLACEMENT UNDECORATED TIMBER EXTERNAL DOOR SETS AND SCREENS
[LOWER TIER – Client to delete if not applicable]

REPLACEMENT UNDECORATED TIMBER EXTERNAL DOOR SETS AND SCREENS

Timber Doors

701 This Section is to be read in conjunction with the general specification for 'Replacement Windows and External Doors – Surveying and Installation' and 'Replacement External Doors – General'.

702 All new undecorated timber doors shall be factory primed, purpose made pre-treated timber double glazed doors, manufactured to applicable Standards.

703 Where required lower panels shall be laminated safety glass or 25mm hardwood raised and fielded panels as appropriate. **Plywood panels shall not be accepted.**

704 Hardwood or aluminium glazing beads incorporating an integral EDPM corded lipped gasket shall be fitted to the external face. **The bead type and colour shall be agreed with the Client's Representative.**

705 All aluminium glazing beads shall be secured with bead retention clips as standard. Factory primed hardwood glazing beads shall be fixed either by secret nailing using stainless steel or copper pins or by stainless steel large headed pins. When pinning with stainless steel large headed pins care shall be taken to ensure that splitting, head indentation of the glazing bead or breaking of the paint surface by the head does not occur. Where this does occur, the indentation shall be filled with approved filler, rubbed down smooth and touched in with approved primer. Bead retention clips may also be used for the securing of hardwood glazing beads.

706 All pre-finished door-sets shall be delivered to site totally completed including factory applied primer or base coat stain, this shall be either opaque or translucent, solvent based or water borne, fully glazed and with all furniture fitted leaving only the need to fix into the prepared opening on site and insitu decoration Note: Projecting furniture i.e. handles, may be supplied unfitted to avoid damage during transit.

707 All workmanship to be to the requirements of the applicable Standard.

708 Timber for use in all doors shall be selected hardwood and in the density range of 650kg/m cu. Doors may be flush fitting or rebated over frame.

709 Flush fitting doors shall have a minimum thickness of 44mm.

710 Rebated doors shall have a minimum thickness of 57 mm.

711 Timber for doorframes shall be selected hardwood and in the density range of 650kg/m cu.

712 All external edges shall have a radius of not less than 1.5mm and not greater than 3.00mm in accordance with Paint Manufacturers technical data sheet.

Note: It is acceptable for this detail to 'run through' all joint lines.

713 Surface waves caused by machining or excessive sanding will not be accepted.

714 All frames, mullions, transoms etc., to be to quality standard required by the applicable Standards.

715 Timber doors to be set in rebated hardwood frames, and 2XG style pre-primed timber doors with upper panel double glazed with laminated safety glass sealed units.

716 Weatherboards to doors are to be included.

Decoration of timber door sets and screens

717 All new timber external door sets and screens are to be built in prior to full decorations being applied.

718 Make good any exposed/damaged surfaces with approved filler. Rub down and leave smooth before applying 1 No. coat of approved primer on base coat stain for bare wood and filled areas.

719 Paint 2 No. coats of white undercoat and 1 No. coat of white gloss pain or 2 No./3 No. coats of stain top coat (as recommended by manufacturer), to all surfaces, rubbing down between all coats.

Client's current manufacturers/suppliers/products

720 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

SCAFFOLDING AND MEANS OF ACCESS

M3NHF SCHEDULE OF RATES – RESPONSIVE MAINTENANCE & VOID PROPERTY WORKS – SPECIFICATION – VERSION 8

SCAFFOLDING AND MEANS OF ACCESS

001 Provide scaffolding for the Works where required by Regulatory Requirements.

002 Moveable towers can be used where Regulatory Requirements allow this. This is also subject to the approval of the Client's Representative for scaffolding above the equivalent of the ridge line of a two storey Property.

003 Only light short-term Work may be done from ladders where this is in line with the Code of Practice for Ladders.

004 Working platforms required at heights of 2 metres and above must be carried by a properly constructed scaffold. Scaffold may be provided at lower levels.

005 Obtain:
- a licence from the highways authority where scaffold is to be constructed on or over the public highway; and
- permission from the adjoining landowner to occupy the space where scaffolding is erected over an adjoining property.

006 Where scaffold is to be constructed on or over the public highway the Provider must:
- consult the highways authority as to whether lighting or any other form of warning is required;
- if so, provide this (with any electrical supply being of a maximum of 100 volts); and
- notify the police where, when and for how long, the scaffold is to be in place.

007 Before erecting any scaffold to which Clause 05 applies, the Provider must provide evidence to the Client's Representative that the permissions referred to in that Paragraph have been obtained and, where applicable, the notifications under Clause 06 have been given.

008 Ensure that any temporary roofs are properly designed and secured and must provide calculations and drawings to the Client's Representative (for checking and approval).

009 Before the erection of any scaffolding to three storeys and above, the Provider must:
- submit an engineer's design of the scaffold to the Client's Representative for checking and approval;
- when erected, supply a certificate from a Member of the Institute of Structural Engineers indicating the scaffolding is in good condition and complies in all respects with all relevant Codes of Practice; and
- similarly certify any alteration to the scaffold.

010 Construct all scaffolds in accordance with:
- Work at Height Regulations 2005 (as amended);
- Applicable Standard; and
- either:
  - NASC Technical Guidance TG20 for tube and fitting scaffolds; or
  - the manufacturer's guidance for system scaffolds.

011 For all scaffolds:
- approved materials in good condition must be used;
- all components must be inspected prior to use;
- sole plates must carry a minimum of 2 standards and wherever possible be placed parallel to the face of the building;
- they must be rigid and constructed on a solid foundation;
- standards must be upright at all times;
- ledgers must be horizontal and fixed with load bearing coupler;
- gaps in working platforms must not exceed 25mm wide and where necessary the inside boards must be secured to achieve this. No gap is to exceed 6 square inches anywhere. Where third parties are at risk, no gaps are acceptable – nothing must be allowed to fall through or off the platform;

- sufficient positive ties to the main walls of buildings must be fitted;
- fans and/or working areas over entrances and exits must be fully double boarded with a continuous membrane between to stop any matter falling through;
- where hoists are erected in scaffold, extra ties must be used to prevent vibration of the scaffold; and
- toe boards and guard rails must be fitted to working or access platforms and to stairs where people working on them could fall 2 metres or more;
- Materials must not be thrown, tipped or allowed to fall off the scaffolds or working platforms;
- when partially erected or partly dismantled a notice saying "Do not use" must be displayed on the scaffold; and
- the scaffold must be made unclimbable at all times when not in use for undertaking the Works.

012 Scaffold requiring protection from lightning strike in accordance with the applicable Standards or equivalent, must be certified by a qualified electrical engineer, when first erected and with regular testing and a certificate being provided at not less than monthly intervals. Copies must be provided to the Client's Representative.

013 Scaffold must be erected, dismantled and altered:
- by competent persons;
- where the scaffolding is over 5m high, under the supervision of a person trained and certificated under the Construction Industry Scaffolders Registration Scheme (or equivalent approved by the Client's Representative);
- in accordance with either:
  - NASC Guidance Document SG4 for tube and fitting scaffolds; or
  - the manufacturer's instructions for system scaffolds; and
- so that at all times windows are openable by the occupants from the inside.

014 Scaffolding must be inspected by the Provider's 'competent person' at least every 7 (seven) days. The Provider must correct any faults found immediately. A record of such inspections and the Provider's report must be submitted to the Client's Representative within 1 (one) Working Day of each inspection.

015 Where the Client's Representative advises the Provider of this, the Provider must allow another contractor working directly for the Client to use scaffolding erected by the Provider, subject to that contractor agreeing to comply with any health and safety requirements in relation to the use of that scaffolding reasonably required by the Provider.

016 Scaffolding must be struck within 1 (one) week of the Client having advised the Provider that the Works have been satisfactorily completed, unless the Client requires the scaffolding to be maintained for another contractor working directly for the Client. In these circumstances:
- the scaffolding must be struck within 1 (one) week of the Client having advised the Provider that the scaffolding is no longer required; and
- the Client must pay the Provider for the use of the scaffolding by the Client's other contractor at the rates payable for the use of scaffolding under the Price Framework (even where the payment for the scaffolding to be erected and maintained for the Works was included in the Rates).

017 Payment for scaffolding will be in accordance with the Schedule of Rates for Scaffolding and Means of Access.

018 The Rates for scaffolding are deemed to additionally include as appropriate for the following:

.1 Basing out, preparing and levelling of ground, provision of additional support, base plates, spreaders and the like as necessary.

.2 Protection of the structure fabric, finishings, roof coverings and the like.

.3 Provision of all requisite tubes and fittings of every description, delivery, handling and removal.

.4 Erecting, supporting, maintaining, adapting and dismantling as required.

.5 Bridging across structures and all other obstructions where necessary.

.6 Removal, temporary storage/resiting, protection and subsequent reinstatement as required of all TV, radio and telecommunication aerials, satellite dishes and the like.

.7 Fans, gantries, hoardings, sheeting and double boarding of working platforms to afford protection around/over entrances, paths, rights of way and other forms of access or thoroughfare unless specifically instructed by the Client's Representative.

.8 Working platforms to towers and chimney scaffolding.

.9 Toe boards, guard-rails, handrails, safe ladder access, ladders, warning signs, taping and the like.

.10 Ancillary plant and equipment such as tower feet/wheels, out-riggers, cross bracing, gin wheels, ropes and the like.

.11 Lighting and/or alarming where deemed necessary or appropriate and/or as specifically directed by the Client's Representative.

.12 Protection against lighting strike.

.13 Fixed handholds and physical ties to the structure where necessary, subsequent removal and making good.

.14 Provision of certified structural design calculations and erection certificates to the Client Representative where required under the Contract.

.15 Reinstatement of ground and making good any damaged surfacing and/or paving's if necessary.

.16 Compliance with all Regulatory Requirements including provision of all associated licences, permits and the like and the payment of all related fees and charges.

.17 Additional lifts of scaffolding, working platforms, handrails, ladders, other access provisions and the like necessitated by structure/roof design, for example changes in roof pitches at mansards and anything similar.