APPENDIX A



Folkestone & Hythe District Council

Replacement uPVC Windows & Doors

**Technical Specification**

**Version 01– Oct 2021**

**Technical Specification for uPVC Windows and Doors**

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# 1. WINDOW REPLACEMENT GENERAL

## 1.1 The Profile

1.1.1 Window profile to meet the requirements of:

1. BS EN ISO 9001:2015
2. BS EN ISO 14001:2015
3. BS OHSAS 18001:2018
4. BS EN 7412:2007
5. BES 6001- BRE 2009 responsible sourcing
6. Secured by Design (as approved by the Kent County Constabulary Crime Prevention Design Team)
7. FENSA Registration
	* 1. The Contractor is to be an approved FENSA Installer and a copy of their accreditation certificate must be provided with their tender.
		2. All British Standards are up to date and comply with requirements.

## 1.2 Replacement Rules

1.2.1 Generally, unless otherwise instructed by the Contractor Administrator, all Crittal, softwood, aluminium and single and double glazed uPVC windows will be replaced in double glazed uPVC units.

* + 1. It will be the responsibility of the Contractor to ensure that, where required in Conservation Areas, and all buildings containing flats / Apartments that the relevant Planning Approval is obtained for the replacement Windows & Doors.

**1.3 Warranties**

* + 1. All windows regardless of type will be installed with the following manufacturer’s warranties:
1. Profile – 10 years against colour deterioration
2. Ironmongery – 10 years
3. Installation (workmanship) – 10 years
4. Double glazed sealed units – 10 years
5. Fabrication – 10 years

# 2. UPVC WINDOWS

**2.1 General Items**

1. Ensure all window units that are removed from the properties and cleared from site at the end of each day and disposed of in line with environmental regulations.
2. All works will be carried out in accordance with any Code of Practice or British Standard in force at this time
3. No services are to be drilled through the uPVC section but are to be ducted around the side frame
4. Where a gas appliance is fitted in a room, the ventilation shall comply with BS5440, Part 2:2009 and with British Gas Regulations
5. Windows must also have evidence for weather tightness performance BS 6375-1:2015 and strength and durability BS 6375-2&3:2009
6. Window must also comply with ‘Specification for enhanced security performance of windows for domestic applications’ to PAS 24:2016

**2.2 Windows to be designed based on the following criteria;**

1. Full 70MM high impact resistant uPVC frames with a 3mm thick external wall.
2. Multi chamber internal frame construction to provide thermal and acoustic insulation efficiency.
3. All frames to be designed and manufactured with an integral drainage channel.
4. All outer frames, Transoms and mullions to be V-notched and heat welded to form a weather proof joint all corner and intermediate joints shall be fusion welded with sprue limiters. Upon completion the welded sprue shall be removed. All joints shall be finished with feature groove cut into the profile along the weld seam maximum 4 mm wide and 0.5 mm deep.
5. PVC frames to be reinforced with galvanised steel where additional structural strength is needed.
6. Frames to be brilliant white. (All other colours removed)
7. Night vent facility as standard on all opening windows.
8. Internally glazed to prevent removal of glass from outside
9. Locking handles as standard only on Ground floor or other vulnerable points, Non locking handles on any window to the first floor or higher.
10. Multi-point security locking including jemmy proof shoot bolt.
11. Austenitic 304 Stainless steel, friction stay hinge.
12. All first floor bedrooms to have an unobstructed opening of at least 450mm x 750mm for fire escape purposes and a 90% degree opening hinge, on egress or fire escape windows c/w Easi-Clean operation.
13. Trickle ventilation to be included as standard
14. Weather tightness to BS 6375:2015 & 16 Parts 1-3

Exposure category (design wind pressure) 1800 pa

**2.3 Assembly**

1. The window units are to be designed with all corner joints, transom joints and mullion joints being mitred and fusion welded.
2. All excess material is to be neatly trimmed and neatly feature grooved to corner, transom and mullion joints.
3. No polishing flush of any joints are permitted.
4. There is to be no mechanical jointing of the profile unless the profile section is less than 350mm long, solvent welded joints will not be permitted.
5. The window units are to be designed so that the route of drainage is prevented from passing through the reinforcement chamber.
6. The dimensional tolerances on the finished outer frame height and width is + or –3mm. Frame assembly to be such that the windows can be installed square within a maximum difference in the diagonals of 4mm.
7. Adequate drainage is to be provided to permit the escape of water from platforms or horizontal members beneath each sealed unit.

**2.4 Reinforcement**

1. All profile sections shall be fully reinforced with hot dip galvanised mild steel complying with the requirements of BS 2989, for coating grade Z2, type G275N.
2. All reinforcement should be supplied by the systems supplier. The reinforcement is to be installed in accordance with the systems supplier’s recommendations. The reinforcement is secured to the profile so that it does not move or rattle and it maintains the structural integrity of the frame and satisfactory thermal separation.
3. Reinforcement profile shall be in one continuous piece within the frame length to within 25 mm of welded joints
4. Reinforcement shall be secured into the profiles with countersunk screws at 400 mm centres, commencing 100 mm from each end. A minimum of two screws shall be used per length of reinforcement.

**2.5 Glazing**

1. All window units are to be manufactured so that the glazing or re-glazing on site is possible without the need to remove the outer frames from the structure of the building.
2. Safety glass to be provided where appropriate to comply with the current regulations, particularly those regulations laid out in Document K:2010 of the building regulations
3. Bathroom, toilet and store windows to be opaque, patterned glass Obscure panel shall be internal.
4. All door glass is toughened safety glass to BS6206:1981 (Partially superseded but remains current and is cited in Building Regulations)
5. All sealed units are guaranteed against breakdown for a minimum of 10 years.
6. All glazing is to be packed in accordance with BPF/GGF recommendations.
7. All beads are cut at the correct degree recommended by the manufacturer.
8. All windows are internally glazed unless access cannot be gained from the inside. Glazing gaskets shall be black EPDM
9. Any door or side panel with glazing that is 1500mm or less above floor level is glazed with toughened glass in accordance with Document K of the Building Regulations.
10. In side panels, or adjoining windows, toughened glass installed where the glass area comes within 300mm of the outer edge of the door and/or is 1500mm or less above the floor level.
11. For internal and external walls, toughened glass is used for areas of 800mm or less above floor level.
12. All glazing is in accordance with Document L of the building regulations.
13. All toughened and laminated installed panels are marked as follows:
14. An identification name or trademark; or other marks capable of identification through a suitable source.
15. The type of material;
16. The number of the British Standard;
17. The classification relating to impact test behaviour (A B or C);
18. These marks are permanent and applied before installation in a position to remain visible after installation. In the case of multiple glazing units, each pane, which complies with the British Standard, is marked accordingly.

**2.6 Fittings**

1. Hinges and variable geometry stays are to be of stainless steel or of materials resistant to or protected against atmospheric corrosion.
2. Friction hinges and variable geometry stays to be re-adjustable unless the fittings are designed so as not to need adjustment throughout the life of the windows.
3. Hardware is replaceable without removing the outer frame from the structure.
4. Where hardware is attached directly to the PVC -u profile with screws it is attached with screws that penetrate at least two thickness of the profile and/or penetrate the reinforcement by at least 2mm. All friction hinges and restrictors shall be secured with Series 300 austenitic stainless steel screws to be protected from atmospheric corrosion.
5. All other hardware and fittings shall be secured with steel screws, nuts bolts and other fastenings in yellow dichromate zinc plated to a coating standard in excess of FE/ZN12 contained in BS 7371-6:2011
6. Friction stays for casement windows is required to conform to the manufacturers guaranteed load capacity.
7. **Hinge:** Securistyle ‘Vector’ hinge or equal and approved. The hinge is to be of austenitic steel which give a 500 hour neutral salt spray test to BS7479. Secured using austenitic screws penetrating reinforcement and/or two-wall thickness of UPVC.
8. **Espagnolette:** Roto TSL Locking System or equal and approved to ground floor windows.
9. Handle: Securistyle Virage range or equal and approved non locking, green push button version for emergency escape and windows above ground floor
10. Restrictors – Cavity fit restrictor complying with BS 6375-2:2009 and Health Building Note 00-10 Part D – Windows and associated hardware Dept of Health 2013. Such as auto latch stainless-steel spring-loaded restrictor with stainless steel stud.
	* + Fitted into the chamber between frame and casement to limit initial opening of the sash to 100 mm the catches is capable of being unfastened only by a deliberate action.
		+ The catches shall re-engage automatically when the windows are closed

**2.7 Security and Safety**

1. Window design and installation generally will be Secure by Design as approved by the Kent County Constabulary Crime Prevention Design Team.
2. Fasteners are designed so that they cannot be released from the outside by the insertion of a thin blade.
3. No opening light can be opened or removed from the outside, when it is fastened in the closed position, except by breaking part of the window.
4. Lockable handles are specified to operate from the inside on large opening lights.
5. One pair of nylon/locking wedges fitted within the rebate opposite each locking point.
6. Side hung casements shall be fitted with PVC screw fixed run up block located along bottom rail at the closing edge.
7. Top hung casements shall be run up blocks located at the jamb and bottom rail at the closing edge.

**2.8 Ventilation Devices**

1. Each ventilator to provide a minimum of 4000mm2 of background ventilation controlled by an adjustable deflector, infinitely variable between fully open and fully closed. The deflector is able to be tilted such that the incoming air can be directed by the occupant at will, either up, or down or any proportion in between.
2. Each louvered canopy is to be secure, provide a minimum of 4000mm2 of background ventilation, to be suitably profiled to prevent the entry of rain, and is complimentary to the internal ventilator in both construction and appearance.
3. Internal and external ventilator components are to have screw covers, to be suitably UV resistant, manufactured from recyclable materials and to be fitted entirely in accordance with the manufacturers instructions.
4. Cord or rod control for windows in obstructed locations such as over kitchen sinks.
5. Ventilator and canopy combinations are to fully meet the requirements of the Building Regulations (Document F), and are manufactured under BS EN ISO 9001.

**2.9 Installation**

1. **Note:** Existing windows shall only be removed when the replacement units are on site and are to be installed during the same working day.
2. Installation of Frame
3. The window is fixed into the aperture by drilling and fixing through the outer frame to the existing structure using ‘Fischer’ fixings, F105 type bolts or similar
4. The fixings are no less than 150mm from corners or transoms/mullions and at no more than 600mm centres.
5. Allow for any necessary glazing blocks and glass lock devices.
6. If a sill is to be fixed to the window frame this is fixed with screws inserted from the underside of the sill into the frame. Ends of the sills will be fitted with capping piece.
7. No fixings are to penetrate the drainage channels.
	1. **Making Good**
8. The fitter will insert into 5mm gap between frame and structure a flexible foam filler making sure it is far enough in so as not to interfere with the sealant and to be continuous around the frame.
9. The fitter will make good to the external surface of the window frame with a UPVC quadrant or cover fillet and finish with a compatible approved low modular silicone sealant to BS5889.
	1. **Guarantees**
10. The fabricated unit and installation must have a guarantee for a period of ten years from the completion date of any works carried out.
11. All double glazed sealed units to be guaranteed, against breakdown, for a minimum of 10 years.
12. Hardware components will match the manufacturer’s warranty.

# 3. SINGLE ENTRANCE DOORS

1. **Secured by Design:** The Contractor shall consult the Kent County Constabulary Police Crime Prevention Design Team to ensure the proposed door installation complies with the Secure by Design Award.
2. **Replacement Rules**:Generally, unless otherwise instructed by the Contractor Administrator, all existing timber, aluminum and uPVC doors will be replaced in:
3. Front doors will be GRP Composite.
4. Rear and side doors to will be of uPVC manufacture.
5. Shed Doors to be vynwood, flush solid doors finished in 4 available colours.
6. It will be the responsibility of the Contractor to ensure that, where required in Conservation Areas, the relevant Planning Approval is obtained for Doors.
7. Existing doors shall only be removed when the replacement units are on site and are to be installed during the same working day.
8. Within one week of the date of practical completion, the Contractor must supply full written guarantees from date of installation for the following:-
9. Profile 10 years
10. Ironmongery 10 years
11. Installation 10 years
12. Sealed Units 10 years
13. Fabrication 10 years
14. The Specifications for doors are PAS 24:2016 which covers enhanced security performance requirements for door assemblies. To ensure compliance the Secured by Design approved range of doors should be third party accredited by the British Board of Agrément (BBA). All doors must have Pas 24 accreditation.
15. **PAS 3621:2011** Tested to the following clauses:
16. Operating Forces – Measure the force/torque required to engage/disengage the hardware
17. Air permeability
18. Water tightness
19. Wind Resistance
20. Resistance to vertical loads
21. Resistance to static torsion
22. Slamming resistance
23. Closure against obstructions
24. Abusive forces on handles
25. Resistance to soft and heavy body impact
26. Resistance to hard body impact
27. Cyclic operation test
28. Basic security test
29. **PAS 24: 2006** Enhanced security performance requirement for door assemblies –

Part 1: single leaf, external door assemblies to dwellings. Tested to the following clauses:

1. Manipulation test – Establish that there is no inherent vulnerability to gaining entry, using calibrated tools to remove trim or hinge pins, disengage or dislodge locking devices or undo threaded fastenings to gain entry.
2. Infill medium removal test – Check that infill panels cannot be removed to gain entry by operating, releasing or disengaging hardware.
3. Mechanical loading test – Apply parallel and perpendicular forces simultaneously to simulate attack with a lever.
4. Manual check test – Use hand tools to identify possible additional loading points other than that covered by the mechanical loading test.
5. Soft body impact test – Impact the external face of the door with a 30Kg leather bag at prescribed heights to assess the resistance to soft body impact.
6. Hard body impact test – Using a 50Kg cylindrical steel block swung on cables to assess resistance to a hard body impact. Impact points include locking points, hinges, non-glazed infill, corners and junction of mid-rail to stile. Each point to be impacted 3 times.
7. **Hardware**
8. Handle furniture to be lever/lever with 10 year guarantee.
9. Butt hinges with security pin, or fully adjustable hinges.
10. Letter plates fitted in midrails (front doors only).
11. All hardware meets the requirements of BS 7412:2007
12. Brass or chrome viewers.
13. Aluminium door knockers.
14. **Locking**
15. The doors to be fitted with key operated secure multi-point locking system that have undergone type approval testing to PAS 24; and approved by the Kent County Constabulary Police Crime Prevention Design Team.
16. 1½ pairs of heavy duty hinges
17. Numerals (front doors only)
18. Storm-proof cill / threshold with integral weather seals
19. Rain deflector / weatherboard
20. Door and window furniture shall be SAA or brass finished to approval of Contract Administrator
21. **UPVC Doors**

**General:** All UPVC window and door replacements shall be constructed from high impact modified UPVC. All UPVC doors and windows shall be manufactured from base materials guaranteed against decomposition and colour fastness for a minimum of ten years.

1. Fabrication of all UPVC frames and sashes shall be generated against failure of welds, mechanical joints etc., for minimum of ten years.
2. Mechanisms and ironmongery shall be guaranteed against the failure of the unit for a minimum of ten years.
3. All UPVC items are to be protected against damage during the course of fixing.
4. The Service Provider will be solely responsible for the accurate measurement of the works and shall amend any errors therein at this own expense.
5. **Profile** Acrylic modified high quality impact resistant white UPVC extrusion, producing a rigid multi-chambered profile, conforming to the requirements of BS EN 12608, manufactured to BS EN ISO 9001. The profile is uniform and free from foreign bodies, cracks or marks. The profile meets the requirements for class ‘1’ surface spread of flame to BS476 Part 7 Class 1.
6. **Reinforcement** Leaf styles and top and bottom rails, together with outer frame jambs, are reinforced for strength and security with galvanised mild steel to BS 7412, sealed within the profile central cavity.
7. **Glazing** Double-glazing to BS 6262, using 4mm safety glass, Double glazed units conform to BS EN 1279. Glazing options to include for patterned glass; All internally glazed with post co-extruded beads.
8. Double glazed units shall be guaranteed against failure of the unit for a minimum of ten years.
9. **Performance** Double Bubblex weather seals to ensure the performance meets the requirements of BS 6375 Part 1
10. A weather bar to be fitted on all open-in doors.
11. **Composite Doors**
12. **Profile (outer frames/mullion/transoms**)

Acrylic modified high quality impact resistant white UPVC extrusion, producing a rigid multi-chamber. Profile, conforming to the requirements of BS EN 7412:2007, manufactured to BS EN ISO 9001.

1. **Reinforcement**

Outer frames to be reinforced with RCM, steel or aluminium reinforcing (to BS 1474), inserted within the centre of the main chamber of the profile. Mullion and Transom profiles to be reinforced with steel reinforcing.

1. **Glazing**
	* Door leafs to be integrally glazed by internal cassette glazing, or alternatively, integral insertion of the glass units within the door leaf.
	* Double glazed units shall be guaranteed against failure of the unit for a minimum of ten years.
2. **Performance**
	* Composite doors to be approved tested to the requirements of PAS 24 General Performance requirements for door assemblies.
	* All Composite door replacements shall be guaranteed against decomposition and colour fastness for a minimum of ten years.
	* Fabrication shall be guaranteed against failure of welds, mechanical joints etc., for minimum of ten years.
	* Mechanisms and ironmongery shall be guaranteed against the failure of the unit for a minimum of ten years.
3. **UPVC / Composite**
4. All doors to be fitted as per manufactures instructions
5. Choice of door colours to be provided – no more than 6 colours, Contract Administrator to approve.
6. Choice of styles to be provided
7. Rear and side doors only-Door types shall be double panelled type 2XG or 2XGG, top panel to be double glazed in toughened glass, bottom panel to be UPVC skinned/foam sandwich with UPVC frame. Contractor to confirm type of foam used and provide Warrington test report to support its use.
8. Panels to be screwed and wedged.
9. Residents doorbell to be carefully removed and re-fixed on installation of the new frame.
10. **Door Size**
11. Height: Maximum 2m to all doors.
12. Width: Main Entrance door minimum 910mm where ever possible.
13. **Door Styles (Indicative)**

  

**Door type 1 Door type 2**

 

**Door type 3 Door type 4**

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# 4. SCAFFOLDING

* + 1. Scaffolding shall comply with all relevant requirements and Codes of Practice under the Health and Safety at Works Act (current edition) and shall provide all the necessary protection for his workmen, tenants and public. Must adhere to BS EN 12811-1:2003
	1. The Contractor shall allow to supply, erect, maintain and dismantle on completion of works, independent tied scaffolding to allow all works to be carried out and provide toe boards, barriers and protection over all entrances, and pathways to protect the public and occupiers at all times.
	2. The Contractor shall allow to supply, erect, maintain and dismantle on completion of works, independent tied scaffolding to allow all works to be carried out including works to roofs, stacks, renewal of soffit / fascia boards and guttering.
	3. Any alterations required to the lifts are to be included in the price.
	4. The scaffold decking is to consist of 225mm boards minimum of 4 boards wide. The scaffolding is to be fully boarded at all times and comply with BS 2482:2009.
	5. The scaffolds are to have toe boards secured in place at least 150mm above the platform, intermediate guard-rails gap max of 470mm above toe board, and full height guard-rails between 950mm and 1,200mm above the platform. These are to surround the perimeter of all the scaffolding.
	6. No element of the scaffolding is to be placed on, or have contact with property that is privately owned without the occupier’s permission and written confirmation of the Contract Administrator.
	7. The Contractor is to fix distinctive foam padding, to base of standard, 2m high, on any standard near the front entrance walkways, paths and entrance doors. Care must be taken not to obstruct bin stores.
	8. Overhead protection over all doorways will be required, adequate perimeter protection of the scaffolding will be required to prevent unauthorised persons entering the areas.
	9. The inclusion of a security alarm to scaffolding will depend upon the specific requirements of the individual properties. The Contract Administrator has allocated each property as *Level 1*:

* 1. **Security Alarm – Level 1.** The scaffolding will be erected without the requirement of a working security alarm. However, the Contractor will be expected to erect dummy alarm boxes and CCTV cameras in suitably prominent positions to deter intruders from attempting to gain access to the scaffolding. In addition, appropriate signboards should be erected to act as a further deterrent to intruders and give the impression that the scaffold is fitted with an alarm linked to a manned telephone system with 24 hours a day coverage.

# 5. REPAIRS AND EXRA-OVER REPAIRS

* 1. Any associated repairs in connection with the replacement of windows and doors must be carried in strict accordance with all current British Standards, Codes of Practise, etc using good quality materials and workmanship.
	2. The contract is to include for **MAKING GOOD** around newly installed Windows & Doors, to a standard not less than that before installation.
	3. The successful contractor will be required to provide a short Schedule of Rates in a ‘Specification of Workmanship and Materials’ of the 70-100 mostly used codes with back up information as to how the costs per m2 or ea have been calculated within 1st quarter 2022.

# ANNEX A - ASBESTOS SURVEYS, ANALYSIS & REPORTING

1. **General**
2. F&HDC shall appoint its own specialist consultant for the Asbestos Surveys and Sample Analysis prior to works commencing under this Contract.
3. The Consultant will be expected to work independently, to manage access to each property, communicate effectively with residents and assist F&HDC in developing and aligning survey reports.

1. The successful window replacement company will be expected to work with the client’s asbestos consultant in relation to programming of the works.
2. Asbestos surveys, testing and reporting will be in accordance with F&HDC’s Asbestos Policy & Procedures. The specification includes:
* Intrusive Demolition / Refurbishment Surveys for ACMs preceding programmes of planned maintenance works in accordance with HSG 264. This will include a Management Survey to the property in addition to the R&D survey.

 F&HDC will appoint its own specialist Contractor for the removal of ACMs who will be independent to the Survey Consultant.

* 1. Asbestos data is currently available
	2. As a minimum all reports must be provided electronically by the contractor to F&HDC in PDF format.

# ANNEX B - SCHEDULE OF BRITISH STANDARDS, ETC

All works must be fully compliant with the British Standards, etc within the Specification. The contractor must clearly reference where the equivalent European Union standard has been used in relation to the specific British Standards, etc below

* **BS EN ISO 9001:2015** Quality management systems.
* **BS EN ISO 14001:2015** standard for Environmental Management Systems
* **BS OHSAS 18001:2018** International Occupational Health and Safety Management Standard
* **BS EN 12608:2003** Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors. Classification, requirements and test methods
* **BES 6001** BRE 2009 Responsible Sourcing of Construction Products
* **BS 5440** Flueing and ventilation for gas appliances of rated input not exceeding 70 kW net (1st, 2nd and 3rd family gases). Specification for the installation and maintenance of ventilation provision for gas appliances
* **BS 6375-1** Performance of windows and doors. Classification for weather tightness and guidance on selection and specification
* **BS 6375-2** Performance of windows and doors. Classification for operation and strength characteristics and guidance on selection and specification
* **BS 7950**. Specification for enhanced security performance of windows for domestic applications
* **BS 2989** Specification for continuously hot-dip zinc coated and iron-zinc alloy coated steel flat products: tolerances on dimensions and shape
* **BS 7412.** Specification for windows and door sets made from unplasticized polyvinyl chloride (PVC-U) extruded hollow profiles
* **TG20:2013** NASC Good Practice Guide for Tube and Fitting Scaffolding