

<u>APPENDIX 'E'</u>				
<u>PVC-U WINDOWS - DESIGN & INSTALLATION PREAMBLES 2.9</u>				
1.	All new PVC-U window assemblies shall comply in full with the general requirements of BS 7412:2002 and BS EN 12608:2003.	GENERALLY		
2.	The fabricators of all new PVC-U window assemblies shall hold a BBA Agrément Certificate in their own name for the frame system they produce, and will have satisfied the BBA with regard to all stated conditions (where appropriate); with proof of compliance being provided to the Contract Administrator prior to the start of works on site.			
3.	The installers of all new PVC-U window assemblies must be registered members of FENSA; with proof of registration being provided to the Contract Administrator prior to the start of works on site.			
4.	Designers shall allow for:- <ul style="list-style-type: none"> * designing out Health & Safety risks in accordance with the requirements of the CDM Regulations 2007; * complying with the requirements of Approved Document B and protection from fire spread; * meeting 'Secured by Design' standards; * the needs of vulnerable residents, including the elderly, wheelchair bound and the disabled. 	DESIGN		
5.	The materials to be used in the manufacture of PVC-U windows shall be of the impact modified PVC-U type A material complying in full with the physical property requirements detailed in BS EN 12608:2003.	MATERIALS		
6.	All units are to be fabricated from white PVC-U only and are to be produced by conventional extrusion techniques.	COMPOSITION		
7.	All sections are to be multi-chambered with a minimum outer frame depth of 58 mm and a maximum of 86 mm. All outer wall			
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	thicknesses are to be 3 mm min; +/- 0.3 mm.			
8.	Each profile must not deviate from a straight line by more than 1 mm/metre.	STRAIGHTNESS		
9.	All PVC-U window units shall be provided with continuous steel or aluminium reinforcement all in full accordance with the system supplier's recommendations and the British Plastic Federation's Code of Practice 323/1 for the Reinforcement of High Impact Modified PVC-U Windows and Doors.	REINFORCEMENT		
10.	In any event, all mullions, all casement members over 800 mm, transoms over 600 mm and frame sections over 1800 mm in length are to be provided with continuous steel or aluminium reinforcement internally during manufacture to provide the required integrity and stability of the finished units in use.			
11.	All corners and junctions are to be fusion welded using purpose-made machinery and finished with a groove.	JOINTS		
12.	Complying in full with the requirements of BS EN 12608:2003; weld joints should not fracture below a stress level of 20 MPA.			
13.	Where specified, profiles with a woodgrain or other surface laminated finish shall be in accordance with the Standard 325/1 "Surface coated high impact PVC-U extruded hollow profiles with heat welded corner joints for plastic windows and doorsets" as issued by the British Plastics Federation.	FOIL LAMINATION		
14.	All new PVC-U units to be adequately protected at all times. Surface protection film shall remain in position until after all installation works have been completed in full.	PROTECTION		
15.	Drainage is to be provided by means of neat unobstructed slots. On combination units, each element is to be treated as a separate window and the drainage slots cut accordingly.	DRAINAGE		
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25.	<p>Area-weighted average U-Values for window units (complete with frames) to not exceed 1.4W/m²K.</p> <p><i>or, where specifically stated,</i></p> <p>Area-weighted average U-Values for window units (complete with frames) to not exceed 1.1W/m²K</p>				
26.	<p>All windows to be fitted with SECURISTYLE Excluder or Defender high security locking mechanisms, manufactured from Austenitic 304 stainless steel. Complete with adjustable mushroom headed cams and substantial system specific keeps all meeting the requirements of BS EN 1670 class 4 corrosion resistance.</p>	LOCKING MECHANISMS			
27.	<p>The keeps shall be of a type that affords a secondary locking position.</p>				
28.	<p>To be SECURISTYLE (as appropriate for the size and weight of the window). All components such as the bottom track, link bars and rivets to be manufactured from Austenitic 304 stainless steel to meet the requirements of BS EN 1670 class 4 corrosion resistance.</p>	HINGES			
29.	<p>SECURISTYLE Defender Egress Easy Clean Hinges with two pairs of SECURISTYLE Vector Excluder non-contact Ancillary Security Devices (ASDs), positioned adjacent to and not more than 50mm away from the hinges to be fitted to all:-</p> <p>* designated fire escape openings (see Clause 46 below).</p>				
30.	<p>SECURISTYLE Defender Restricted Hinges with two pairs of SECURISTYLE Vector Excluder non-contact Ancillary Security Devices (ASDs), positioned adjacent to and not more than 50mm away from the hinges to be fitted to all:-</p> <p>* remaining window casements.</p>				
31.	<p>All handles (except to egress windows) to be lockable SECURISTYLE Vision Handles. To incorporate a push to release mechanism with a barrel lock, all to BS 6462-1985 strength test C3.</p>	HANDLES			
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<p>32.</p> <p>33.</p> <p>34.</p> <p>35.</p>	<p>Nominated emergency egress windows to be fitted with non-lockable 'green' push to release non deadlocking SECURISTYLE Vision Handle.</p> <p>All lockable handles shall be (standard) key operated. Allen or similar keys are unacceptable.</p> <p>All nominated emergency egress windows, at first floor level and above, to be fitted with Winkhaus Safety Restrictors, OBV pattern, non locking, surface mounted, push, to release restrictors for intuitive operation, colour white; as manufactured by Winkhaus (UK) Ltd Tel 01536 316000.</p> <p>All fasteners used in the manufacture of PVCu windows and doors must meet the following specification:</p> <p>Be manufactured by an ISO 14001 registered company and to meet the requirements of BS 7543:1992 be manufactured from austenitic (non magnetic) stainless steel as prescribed in BS EN 10263–1:2001, BS EN 10263–5:2001 and BS EN ISO 3506–1:1998 with the exception of those fasteners used for reinforcement retainment only. <u>Fastener threads connecting into the reinforcement must be austenitic.</u> Nitrided austenitic and marstensitic fasteners will not be permitted due to reduced corrosion resistance.</p> <p>Fastener manufacturer to provide a 20 year Warranty and Independent Product Liability Insurance certificate.</p> <p>Fasteners for steel reinforced PVCu will incorporate a welded carbon steel drill point to ensure optimum mechanical performance. <u>The threads connecting into the reinforcement must also be austenitic stainless steel.</u> Where aluminium reinforcement is used the drill point may be manufactured in austenitic stainless steel.</p> <p>To meet the requirements of BS 6375: part 2: 1992, fasteners for unreinforced PVCu will have a single thread flank (minimum diameter of 4.3mm) with fully threaded self piercing point to ensure optimum</p>	<p>RESTRICTORS</p> <p>FASTENERS</p> <p>to tender summary</p>	<p>£</p>		
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	<p>mechanical performance and safety even when stripped during installation.</p> <p>Fastener head style, thread form and diameter to be determined by technical assessment and will suit the application as applicable.</p>				
36.	Include for all associated window unit accessories; whether specifically mentioned or not.	WINDOW UNIT ACCESSORIES			
37.	All low-level infill panels shall incorporate 2 layers of CELUFORM LTD cladding (with an insulation infill); finishing style to be agreed prior to manufacture.	SANDWICH PANELS			
38.	To incorporate CELUFORM LTD products in all circumstances. Alternatives will not be permitted.	CLADDING			
39.	All new units shall comply with the performance requirements for operation and strength specified in BS 6375: Pt 2.	PERFORMANCE			
40.	All new units shall also comply with the performance requirements for Air Permeability, Watertightness and for Resistance to Wind for the specific location, all in accordance with BS 6375-1:2004.				
41.	The security standard of all new units shall comply in full with BS 7950:1997 and the recommendations of BS 8220-2000. Evidence of compliance with BS 7950:1997 shall be a condition of the tender.	SECURITY			
42.	Where existing windows are being replaced, the new units should have a fenestration layout that, subject to the requirements of Preamble Clauses 41-45 below, matches the existing and, in any respect, shall be agreed with the Contract Administrator prior to manufacture. Failure to do so will be at the contractor's risk.	FENESTRATION			
43.	All window units shall generally be provided with ventilation openings with a total area of at least $\frac{1}{20}$ th of the floor area of the room, and with some part of the ventilation opening at least 1750 mm above the floor level.	OPENING LIGHTS			
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<p>44.</p> <p>45.</p> <p>46.</p> <p>47.</p> <p>48.</p> <p>49.</p> <p>50.</p>	<p>All window units shall incorporate a fanlight wherever practicable, or unless specifically detailed otherwise.</p> <p>All window units shall incorporate an opening casement wherever practicable.</p> <p>Wherever practicable, all window units to all habitable rooms above the ground floor shall include for an opening casement that opens out to a full 90° to form a clear and unobstructed opening (for fire escape purposes) that is no less than 0.33m² in area, and has a minimum width and height of 450 mm; all in accordance with Approved Document B: 2006, Section 2.8.</p> <p>The bottom of the openable area shall be not more than 1100mm above the floor.</p> <p>A secure label clearly marked 'FIRE ESCAPE WINDOW' shall be provided to each escape window provided with 'Egress Hinges'; located to the bottom right-hand corner of the glazed unit to the relevant opening casement.</p> <p>All hardware and window designs should permit safe cleaning of windows from within the property without putting the occupier in a dangerous position all in accordance with BS CoP 8213:2004 for safety in use and during cleaning of windows.</p> <p>Ensure that a Risk Assessment has been undertaken on each property; to include issues such as emergency egress window requirements and top hung fanlight restriction requirements.</p> <p>Securistyle product limitations must be strictly observed within the terms of the conditions of supply. It is the responsibility of the fabricator/installer to ensure that the performance of the window complies with the relevant standards and specification requirements for the particular window and that the correct Securistyle product is chosen for the weight and design of each window system. Advice on the supply and selection of the correct product can be obtained from the Securistyle Customer Help Desk on: Tel. 01242 221200</p>	<p>FIRE ESCAPE WINDOWS</p> <p>CLEANING IN SAFETY</p> <p>to tender summary</p>	<p>£</p>		
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51.	All window units should incorporate adjustable fly-screened ventilators to provide no less than 8000 mm ² per habitable room; and 4000 mm ² to all other rooms; all with a view to meeting the ventilation requirements detailed in Approved Document F: 2006, Table 1.2a.	BACKGROUND VENTILATION			
52.	Window units to rooms containing open flued or flueless heating appliance with no other permanent form of ventilation shall incorporate an in-built open ventilator of the required size to suit the type and size of appliance.	APPLIANCE VENTILATION			
53.	All windows are to be stored under cover, on edge upon a padded, damp-free surface and suitably supported to avoid distortion or damage.	SITE STORAGE			
54.	Under no circumstances shall windows be laid flat or stacked one on top of another.				
55.	The transportation of windows around the site shall ideally be by hand. If a flat bed trailer is used, the windows shall be stood on edge, on a padded surface and made secure.	HANDLING			
56.	Under no circumstances should windows be loaded into the buckets of dumpers or diggers etc.				
57.	The fitted tolerance allowed on the width and height of an aperture should not exceed 8-10 mm (ie 4-5 mm on all edges).	TOLERANCES			
58.	All PVC-U window units shall be installed in full accordance with with the British Plastics Federations' Codes of Practice for the installation of PVC-u windows and doorsets - 356/1 (for New Build) & 357/1 (for Existing Dwellings).	INSTALLATION			
59.	Where windows are to be secured using purpose designed FIXING CLEATS, they shall clip into the periphery of the window and extend into the room. They should be used at 600 mm c/c max on all sides; with a minimum of two per side and no fixing nearer than 150 mm from a corner. Should some mechanical fixings not be practicable, continuous urethane foam (Febfoam or				
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	<p>similar) fixing will be permissible subject to the approval of the Contract Administrator in advance; though not so as to cause any distortion of the frame etc.</p>			
60.	<p>Where windows are to be secured by direct screwing, this shall be through the frame profiles from the inside of the building. 9 mm holes shall be drilled through the first skin of PVC-U and 5 mm holes through the remaining skins, at 600 mm c/c max on all sides; with a minimum of two per side and no fixing nearer than 150 mm from a corner. No 10 round headed rust-proofed screws should then be used to fix the window into plastic wall plugs. The 9 mm counterbored holes are to be plugged with a neat white plastic cap adhered with a solvent cement.</p>			
61.	<p>Care should be taken not to distort the edge profiles and plastic packing shims must be used between the window and wall construction to space out the frame square and firmly before fixings are tightened.</p>			
62.	<p>Riser blocks to be fitted to all casements and fanlights over 600mm in width or height.</p>	RISER BLOCKS		
63.	<p>When, during the course of removing existing units for replacement, it is found that the construction above does not incorporate adequate lintol support, the Contract Administrator shall be advised immediately and temporary support installed. No further work shall be undertaken until a specific direction has been received from the Contract Administrator</p>	MISSING LINTOLS		
64.	<p>The external perimeter of the windows should be sealed with EXPANDITE products all in accordance with the manufacturer's recommendations; white "Hilastic 44" sealant upon an "Expancell" back-up cord or "Expandafom" joint filler.</p>	EXTERNAL SEALING		
65.	<p>The joint between the new window frame and an existing window board shall be covered with a suitable CELUFORM LTD white plastic cover fillet and secured with a high modulus silicone sealant. STELMAX</p>	INTERNAL SEALING		
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	<p>1965 gap filler should be run along the joint between the plastic fillet and the window frame; and between the plastic fillet and the cill board.</p>				
66.	As required, the jamb and head joints should be sealed with a variety of trims available from CELUFORM LTD.				
67.	Any damage to internal decorations or external brickwork/rendering etc shall be made good to match the existing.	MAKING GOOD			
68.	Clear and secure identification of the Manufacturer shall be provided within the reveal of all opening lights; by means of a small label/plate secured to the frame jamb.	MANUFACTURER IDENTIFICATION			
69.	The Contractor's quality control procedures with respect to the manufacture and installation of all new windows shall be no less than that demanded by BS EN ISO 9001:2000	QUALITY CONTROL			
70.	The Contractor shall be required to submit a company site inspection form for each property; showing that the Contracts Manager has checked and confirmed that each individual window is in good condition, has been well fitted, is operating correctly and that any making good of defects to reveals etc has been completed satisfactorily				
71.	Its submission to the Contract Administrator shall be a prerequisite to the issuing of a Practical Completion Certificate for the works				
72.	All materials, components (inc glass and fittings) and workmanship associated with new PVC-U windows shall be covered by a comprehensive 10 year minimum guarantee.	GUARANTEE & WARRANTIES			
73.	All window hardware must be covered by the manufacturer's 'Partnership Pledge' 10 year Audited Warranty Scheme. The scheme is to include both fabricator visit reports and site visit reports, followed by the issue of warranty certificate by the hardware manufacturer on completion of the project or phase.				
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	<p>74. The submission of the guarantee to the Contract Administrator shall be a prerequisite to the issuing of a Practical Completion Certificate for the works.</p> <p>75. The submission to the Contract Administrator of a list of all components used in the fitted windows (detailing 'manufacturer', 'component name' & 'part no') shall also be a prerequisite to the issuing of a Practical Completion Certificate for the works.</p>	<p>COMPONENT DETAILS</p> <p>Updated: 15.06.2007</p>			
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