



TWA
SCHEME

CRITERIA & REQUIREMENTS



WINDOW AND ENTRANCE DOORSET REQUIREMENTS

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INTRODUCTION

This latest revision of the BWF Timber Window Accreditation Scheme criteria includes additional requirements for the information provided with the warranties and the test reports. To allow Scheme Members time to obtain this information the full requirements will not be imposed during this year's annual inspections but Members will be expected to update their information by the 1st January 2005.

1. SCOPE

- 1.1. This document sets out the criteria for the manufacture of timber windows and timber doorsets for the UK market that must be met in order to be considered for entry into the BWF Timber Window Accreditation Scheme. The criteria covers all timber window types and hinged or pivoted entrance doorsets.
- 1.2. It is intended that these manufacturing criteria apply to windows and doorsets designed to receive insulating glass units.
NOTE: However it is recognised that in some situations a single glazed window or doorset may be required. If single glazing is required this may be permitted subject to agreement with the manufacturer and the use of the correct glazing materials and bead sizes.
- 1.3. These manufacturing criteria apply to single window units and entrance doorsets. The individual units in a composite window or entrance doorset are covered for their individual performance characteristics but the overall performance of a composite unit is the responsibility of the manufacturer.

2. DEFINITIONS

- 2.1. For the purposes of this manufacturing criteria the definitions given in BS 6100; Section 1.0, sub section 1.3.5 and 1.5.1 and Section 1.6 shall apply together with the following:-
- 2.2. Enhanced security
Shall be as defined in BS 7950
- 2.3. Factory applied coating
The application of the coating system by mechanical means within a factory controlled environment.
Note. The use of hand brush application is not permitted, unless approved in writing by the coating supplier, although brush finishing of coatings that have previously been mechanically applied is permitted.
- 2.4. Machining
The conversion of the timber sections, raw timber blanks or timber profiles into the finished window or doorset section sizes, including all rebates, grooves, mortice and tenons appropriate for assembly into the finished product.

2.5. Manufacturer

The producer of the complete window or entrance doorset.

2.6. Product

Either the window or entrance doorset or a combination thereof.

2.7. Supplier

The producer of the component or system and not the sales outlet, unless this is the same company.

3. GENERAL REQUIREMENTS

3.1. The windows shall, as a minimum, meet the requirements of BS 644 "Timber Windows: Specification for factory assembled windows of various types".

3.2. Where applicable the products covered by this criteria shall also meet the requirements of the Building Regulations for England & Wales, Building Standards Scotland and the Northern Ireland Regulations as appropriate.

3.3. All products and materials shall be used in accordance with the supplier's instructions.

4. TIMBER AND WOOD BASED PANELS

4.1. Timber shall be of at least Durability Class 3 as defined in BS EN 350-2 "Durability of wood and wood-based products - Natural durability of solid wood-Part 2: Guide to natural durability and treatability of selected wood species of importance in Europe" or shall receive a preservative treatment (See 5.0).

4.2. The quality of the timber selected for the manufacture of a product shall be capable of accepting the coating system specified. The moisture content at the time of machining of the components shall not exceed 18%.

4.3. The minimum density of timber to be used in the manufacture of products shall be 400kg/m³ for softwoods and 450kg/m³ for hardwoods.

4.3.1. NA1 and NA2 of BS EN 942 shall be used to identify the reference density of the species used. For species not listed reference shall be made to the BWF Technical Department for the density confirmation.

4.4. Laminated timber used in the manufacture of timber products shall meet the requirements of BS EN 13307-1. Where possible laminated timbers that have been subject to a third party assessment scheme which assesses the quality of the product shall be used.

- 4.4.1. The supplier of the laminated products shall provide a certificate confirming the frequency of inspection and the tests required during the inspection.
- 4.5. Finger jointed sections shall be acceptable in any section. The manufacturer shall advise the client where finger jointed sections are used in products that are designed to receive a translucent coating.
- 4.6. The timber for the products shall meet the requirements of BS EN 942: Timber in joinery - General classification of joinery quality and shall be of the following classes or better:-

Element	For Fully Finished Products	All other products
Frames in windows & doors	Class J30	Class J40
Casements or sashes	Class J10	Class J30
Stiles & rails to doors	Class J10	Class J30
Lippings	Class J2	Class J2
Beads & similar small sections	Class J2	Class J2
Thresholds, sills	Class J10	Class J30
Panelling& infills	Class J10	Class J30

- 4.6.1. Evidence shall be provided that a grading check is carried out subsequent to the machining of the components.
- 4.7. All parcels of timber shall be checked for moisture content at the time of delivery and the moisture content recorded. All timber recorded as outside the moisture content required shall either be returned to the supplier or shall be quarantined until the required moisture content is reached.
- 4.8. All virgin timber shall be sourced from sustainable and legal sources identified under independent certification schemes, such as those identified by The Central Point of Expertise on Timber Procurement (CPET).

5. PRESERVATIVE TREATMENT

- 5.1. The manufacturer shall obtain a service life warranty from the supplier of the preservative. The minimum acceptable level of treatment shall be capable of achieving a 30 year desired service life as indicated in BS 8417 Table 6, Table 8 or Table 9.

Commentary: Flow coat applied preservatives are acceptable as part of a full preservation/surface coating system. The European standards for these systems are still under development. Manufacturers who wish to use these systems should use a system which has been evaluated by an assessment organisation approved by the BWF.

- 5.1.1. The supplier of the preservative shall carry out periodic checks of the process and provide the manufacturer with written confirmation of correct application of the process.

- 5.1.2. All treatment processes and materials shall meet the requirements of BS 8417 Table 6, Table 8 or Table 9, or be approved under the BWPDA Preservative Approval Scheme, or be covered by an assessment report prepared by the BRE Timber Division identifying the required desired service life.
- 5.2. Where the treatment process is carried out at a third party's premises it may not be possible to obtain a warranty directly from the preservative supplier. In these circumstances the BWF Third Party Protocol shall be used to obtain the necessary warranty (Copies available from BWF) unless the treater is a member of the Wood Preservation Association's Pretreater Scheme.
- 5.3. The machining of all the various timber components shall be completed before treatment, unless the process is acknowledged by the treatment warranty provider.

6. WEATHERSEALS

- 6.1. All opening lights and fixed lights shall be weather sealed with proprietary seals or gaskets which shall carry a 10 year supplier's warranty.
- 6.1.1. The supplier's warranty information shall identify the performance level of the weatherseal as identified in BS EN 12365 when subject to the tests required by BS EN 12365.
- 6.1.2. The supplier's warranty shall identify the acceptable gap to be provided between the frame and casement, the frame and sash of the frame and door leaf prior to the fitting of the weatherseal.
- 6.2. All weatherseals or gaskets shall be capable of easy replacement and shall be fitted securely in accordance with the supplier's instructions.
- 6.3. Where a product is to receive additional finishing coats on-site, the site information leaflets shall contain advice on keeping coats off the seals.

Note. All weather seals must be compatible with the coating system and should, where practical, be fitted after the finishing process so as to avoid over-painting.

7. HARDWARE

- 7.1. All hardware that will be subject to the external elements shall be manufactured from corrosion resistant materials or shall be suitably protected against corrosion. Combinations of metals that may have an electrolytic inter reaction shall not be used together unless protected against electrolytic reaction.
- 7.2. All hardware shall meet the requirements of the 96 hour salt spray test in BS EN 1670 1998 with the exception of traditional sliding sash internal hardware (brassware).
- 7.3. All hardware shall have a supplier's warranty of 10 years.
- 7.3.1. The information accompanying the warranty shall include a summary of the test evidence showing the results of the BS EN 1670 tests and identifying the relevant test house.
- 7.3.2. Full details of the type, size and number of fixings required for each component warranted shall be included in the information accompanying the warranty.
- 7.3.3. Information on any necessary maintenance shall be included.
- 7.4. Where hardware needs regular maintenance the manufacturer shall ensure that this information is provided for the end user.

8. ADHESIVES AND BONDING TAPES

- 8.1. Where adhesives are used for the assembly of products these shall meet the requirements of BS EN 204 'Classification of non-structural adhesives for joining of wood and derived timber products'.
- 8.2. A minimum acceptable level of adhesive performance shall be BS EN 204 Type D3 for all frame, casements, sash, stile or rail joints.
- 8.2.1. Test information shall be available to confirm the adhesive has been tested to BS EN 205 and meets the Type D3 performance level or better.
- 8.3. Full data sheets shall be provided for audit purposes to provide information on the application of the adhesive including pot life, application techniques, curing times and temperatures and, where appropriate, pressure requirements.
- 8.4. Where tapes are used to bond internal and external glazing bars to the glazing unit these shall carry a 10 year warranty of performance.
- 8.4.1. Full data sheets shall be provided for audit purposes to provide information on the application of the tapes used including storage life, application techniques, curing times and temperatures and, where appropriate, pressure requirements.
- 8.4.2. Where timber components are to be bonded after coating, information shall be provided on the curing time for the coating system.

- 8.4.3. Test evidence shall be available to confirm the suitability of the tapes selected for the chosen end use.

9. FINISHES

- 9.1. As a minimum all products shall be supplied with either a base coat stain or a paint primer to BS 7956 or alternatively shall be coated with product that has been given a 3 month warranty by the coating supplier. The coating systems used and warranted shall be factory applied.

- 9.2. Where a product is provided fully finished the coating supplier shall provide the minimum warranty periods.

For stain finishes the minimum warranty period shall be 5 years.

For paint finishes the minimum warranty period shall be 8 years.

The warranty shall assume the optimum environmental location identified in BS EN 927. The coating supplier shall identify the alternate durability periods as appropriate by means of the classification method given in BS EN 927.

- 9.3. Only stain or paint systems which are manufactured specifically for external use on timber shall be used.

- 9.4. The coating system used shall have a supplier's warranty on performance appropriate to the number, type of coats and intended location.

- 9.4.1. The warranty shall indicate the method of application and the number of coats required together with the minimum coating required for the warranty conditions. Unless supported by the supplier's warranty the minimum coating thickness (dry film measurement) that shall be acceptable is:-

- (a) 50 microns for a semi-finished system or,
- (b) 120 microns for a fully finished.

Instructions shall be available indicating the responsibility for ensuring correct film thickness and the method of measurement.

- 9.4.2. The moisture content at the time of coating shall not exceed 16% or as specified by the coating supplier. Moisture content readings shall be taken before the coating process begins or alternatively within the first hour of each production day and shall be recorded.

Note: Where readings taken over one working week show a consistent moisture content not exceeding 16% the frequency of readings may be halved. This frequency should not drop below one reading per working week.

- 9.5. Fully factory finished products shall have the finishing system applied to all exposed faces of the product including those concealed by the building structure. The faces hidden by the fitting of fixed lights shall receive at least two coats before the fitting of the fixed light.

- 9.6. An appropriate end grain sealant shall be applied to concealed and exposed end grain areas. The use of the adhesive or the finishing system is acceptable provided that it has been approved using the BWF Test for end grain sealants. An appropriate end grain sealant is one that has passed the BWF Test for end grain sealants. Evidence of meeting the BWF end grain sealant test shall be provided.
- 9.7. An information leaflet shall be available advising customers of the preferred finishing schedule or in the case of fully factory finished products advice on any necessary maintenance and protection schedules.

10. GLAZING

- 10.1. All products shall be capable of taking insulating glass units. Where site glazing is anticipated, or the glass unit size is 1 m² or greater, the product shall use an appropriate drained and ventilated system.
- 10.1.1. For drained and vented systems, the minimum such requirements shall be for a 15mm rebate upstand and the platform shall be sloped to a minimum angle of 6°. Rebates with an 18mm upstand shall be either level or have a similar slope.
- 10.1.2. Where a product cannot use a drained or ventilated system the manufacturer shall provide sufficient glazing instruction so as enable the insulating glass unit to perform satisfactorily for a minimum of 10 years.
- 10.2. The type of glazing system to be used for factory glazing applications is not subject to any specific requirements, except to meet the minimum requirements of BS 8000: Part 7. The supplier shall provide a 10 year warranty for the glazing unit fitted.
- 10.2.1. A full specification for the factory glazing system shall be provided identifying the number and location of all glazing blocks, the type of glazing tape or glazing sealant and the method of providing any necessary ventilation to the glazing rebates.
- Note: A BWF Guidance note will be made available to identify the minimum requirements for glazing systems.*
- 10.3. All insulating glass units shall have passed the test requirements of BS EN 1279: Part 2. All tests shall be carried out by a test house which has been accredited by UKAS for the purposes of performing that test.
- 10.4. Where the contract specifies factory fitted glazing and the size of the subsequent component would be impractical, site glazing will be acceptable subject to the fitting of the glazing unit being in accordance with the product manufacturer's instruction, under his control, and as agreed with the client.
- 10.4.1. A set of written instructions, to cover site glazing shall be available identifying the method of preparing the rebate, the location of any glazing blocks, the glazing system to be used and the method of fixing the glazing beads or any other glazing components deemed necessary.

11. PERFORMANCE REQUIREMENTS

- 11.1. All windows and entrance doorsets designs shall be tested to meet the performance levels specified in clause 12.
- 11.2. All windows and entrance doorsets designs that are sold as providing enhanced security capability shall have been tested to meet the enhanced performance requirements as specified in clause 13.1.
- 11.3. Thermal performance shall be assessed either against Table 6e of SAP 2005 or clause 13.2.
- 11.4. All type tests, required to show compliance with the Scheme shall be carried out by a test house which has been accredited by UKAS for the purposes of performing that test, or if based overseas shall be equivalent to UKAS.
- 11.5. Where a test method provides for a variety of different performance levels the specimens tested shall meet or exceed the performance level specified in this document.
- 11.6. Following satisfactory performance of the tests the test house shall provide a test certificate.
 - 11.6.1. The test certificate shall contain a full description of the sample tested, including, identifying the profile of the timber components, the type of hardware used, its location, a full description of any screws or bolts used in the fixing of any component including its size and length. A full description of the weather seals used in the product shall be given.
- 11.7. All product designs shall be retested at least every 5 years.

11.8.

12. COMPULSORY PERFORMANCE REQUIREMENTS

12.1. Weathertightness and Operational performance

- 12.1.1. A product will be deemed to meet the Weathertightness requirements of the Scheme if a sample of the product has been tested and classified in accordance with Appendix A1.
- 12.1.2. A product will be deemed to meet the Operational performance requirements of the Scheme if a sample of the product has been tested and classified in accordance with Appendix A2.

12.2. Type test selection

For the purposes of these tests the sample selection shall be typical for the product range to be classified, and agreed with the BWF Technical Department. Alternatively the following sample selection will be considered as a minimum.

- (a) For a side hung, the sample shall be equivalent to 1800mm (3 module) wide X 1350mm high divided to one side hung casement alongside a fixed light with a 600mm (1 module) high fan light over (See Appendix A5).

- (b) For a top hung or tilt-turn casement window the sample shall be 1200mm wide x 1200mm high and vertically divided so as to create a single opening light and single fixed light of equal size.
- (c) For a vertically sliding sash window the sample shall be 1200mm wide x 1200mm high and horizontally divided to create two sashes of equal size.
- (d) For an entrance doorset the sample shall be fitted into a door frame of overall dimensions of 900mm wide and 2100mm high.

All samples shall be fully glazed and decorated for the test and shall include all operational hardware.

- 12.3. If the size and style selection is not appropriate for the manufacturer's product range an alternative style and size shall be used following discussions with the BWF Technical Department.

13. OPTIONAL PERFORMANCE REQUIREMENTS

13.1. Enhanced Security

- 13.1.1. A product will be deemed to meet the Enhanced Security requirements of the Scheme if a sample of the product has been tested and classified in accordance with Appendix A3.

13.1.2. Type test selection

For the purposes of these tests the sample selection shall be typical for the product range to be classified, and agreed with the BWF Technical Department. Alternatively the following sample selection will be considered as a minimum.

- (a) For a side hung, top hung or tilt-turn casement window the sample shall be 1200mm wide x 1200mm high and vertically divided so as to create two separate opening lights of equal size closing onto a central mullion.
- (b) For a vertically sliding sash window the sample shall be to the manufacturer's preferred largest size or 1200mm wide x 1200mm high and horizontally divided to create two sashes of equal size.
- (c) For an entrance doorset the sample shall be fitted into a door frame of overall dimensions of 900mm wide and 2100mm high.

All samples shall be fully glazed and decorated for the test and shall include all operational hardware.

- 13.1.3. Products sold as achieving an Enhanced Security level shall be supplied factory glazed.

13.2. Thermal performance

- 13.2.1. A product will be deemed to meet the thermal performance requirements of the Scheme if a sample of the product has been tested and classified in accordance with Appendix A4.

13.2.2. Initial type test selection

For the purposes of these tests the following sample selection will be considered as suitable.

- (a) For a side hung, top hung or tilt-turn casement window the sample shall be 1240mm wide x 1430mm high and vertically divided so as to create a single opening light and single fixed light of equal size.
- (b) For a vertically sliding sash window the sample shall be 1200mm wide x 1200mm high and horizontally divided to create two sashes of equal size.
- (c) For an entrance doorset the sample shall be fitted into a door frame of overall dimensions of 900mm wide and 2000mm high.

13.2.3. All samples shall be fully glazed and decorated for the test and shall include all operational hardware.

14. WORKMANSHIP

- 14.1. General workmanship shall be in accordance with BS 1186 "Timber for and workmanship in joinery: Part 2 Specification for workmanship."
- 14.2. Timber members shall be cleanly and accurately machined and shall have a surface finish suitable to receive the finishing system.
- 14.3. Unless designed otherwise all joints shall be glued with the appropriate adhesive meeting the requirements of Clause 7. Nails, star dowels or other fixings required to secure the joints in windows shall be in accordance with the requirements of BS 644.
- 14.4. The minimum dimension of any timber glazing bead shall be the depth of the rebate or 15 mm (whichever is the greater) x 15 mm. Beads not used to retain the glass unit in place are not restricted in size.
- 14.5. The dimensions of the finished window shall be as measured at the time of manufacture. Casements and sashes shall not distort from shape to an extent that impairs the performance of the window notwithstanding the following tolerances:-

Subject to the following tolerances the work size of the window shall be 5 mm less than the co-ordinating size.

Overall height and width	±2 mm
Glass opening size	±2 mm

Difference in length of diagonals	
Height plus width up to 1800 mm	±3 mm
Height plus width over 1800 mm to 3000 mm	±5 mm
Height plus width over 3000 mm	±10 mm

Straightness: No element of the window shall deviate from straight by more than 3 mm in 1200 mm or 5 mm in 2400 mm.

- 14.6. The tolerances required for the manufacture of an entrance doorset shall be in accordance with BS 4787 Part 1

- 14.7. Joints between members shall be either combed joints, or mortice and tenon joints or mitred joints in accordance with BS 1186: Part 2, or mechanical joints which are not included in BS 1186: Part 2. Mechanical joints shall be designed so that water cannot be entrapped.

NOTE. Glued dowelled and mechanical joints may be used for connections between mullions and frame and between glazing bars.

- 14.8. Nails, star dowels or other fixings used to secure joints in casements and sashes of windows shall be inserted from the inside surface. All fixings shall be punched below the surface of the timber members. Single small pins used to secure joints on casements and sashes may be fixed externally.
- 14.9. Open joints occurring at the junction of shaped components (e.g. where a transom adjoins a jamb or mullion incorporating weathering grooves) shall be filled to prevent water ingress to the joint unless designed to function otherwise.
- 14.10. Any joint of a sill or other frame, casement or sash member, formed by laminating two or more pieces of timber, shall be so positioned as to ensure that its edges are located away from any point of severe exposure to the weather.
- 14.11. When drips or extended sill members are formed using separate sections, these shall be fixed by glue or mastic, preferably with mechanical fixing, through a concealed surface at the time of manufacture.

NOTE. Mechanical fixings can be concealed by plugs or suitable filler

- 14.12. Windows or doorsets to be site glazed shall be supplied with the beads loose. Bottom glazing beads shall be full width.

Mitred beads are only acceptable,
with a drained and ventilated glazing system; or
with small panes where the cut ends of the beads have been end sealed; or
where the beading is fitted internally.

- 14.13. Timber beads shall be fixed at 50 mm from each end and at 150 mm centres for pins, or at 200 mm centres for screws. The length of the pins and screws shall be at least twice the thickness of the bead being fixed.

NOTE. When loose components such as beads or other inserts are supplied, instructions for their secure final fixing should be provided by the manufacturer.

15. MARKING

- 15.1. All the windows and entrance doorsets sold as complying with this standard shall be fitted with a label, available only from BWF, containing the following information:-

- 15.1.1. The manufacturer's name.
- 15.1.2. The manufacturer's scheme membership reference number.
- 15.1.3. Manufacturer's telephone number.
- 15.1.4. The unique reference number for each window or doorset.

- 15.2. The window label shall be located in the frame rebate to an opening light, so positioned as to be clearly visible and readable when the window is open. If the window contains only fixed

lights the label shall be fitted into the upper area of the furthest right hand side glazing rebate (when viewed from the bead side).

- 15.3. The doorset label shall be located immediately below the top hinge and fitted to the frame.
- 15.4. The manufacturer shall keep a record of the labels used. This shall enable the condition of the window or doorset, at the time of completion, to be identified. This record shall be maintained through the period of the warranty.
- 15.5. The traceable information to be recorded shall include all those items for which a warranty is required.

16. QUALITY CONTROL

- 16.1. The manufacturer shall maintain a written factory production control procedure.
- 16.2. Any company with an ISO 9001 system approved by a UKAS accreditation body shall be deemed to meet this requirement provided that the procedures cover those aspects identified in this section.
- 16.3. All non-referenced dimensional measuring equipment (e.g. tapes and rules) shall be checked at least once per month against a standard measurement control, if not otherwise controlled by an ISO 9001 system. Any equipment found to be out of range by more than 1% shall be removed from use.
- 16.4. Any electrical or mechanical measuring equipment shall be checked for calibration at 6 monthly intervals. Any equipment found to be out of range by more than 1% shall be removed from use and returned to the equipment manufacturer or supplier for recalibration.
- 16.5. As a minimum the written procedure shall provide for the following actions:-
 - 16.5.1. Measurement and recording of timber moisture control at the time of delivery. All timber outside the prescribed moisture content levels is to either returned or quarantined.
 - 16.5.2. Instructions for the grading of material during the manufacturing process are to be available and followed. The appropriate personnel responsible are to be identified.
 - 16.5.3. Instructions for the checking of component dimensional accuracy during the manufacturing process are to be available and followed. The appropriate personnel responsible are to be identified.
 - 16.5.4. Random samples are to be provided and checked by the preservative supplier following treatment cycles to ensure compliance with BS 8417
 - 16.5.5. Preservatively treated timber is to be stored for 'drying' following treatment. Instructions confirming the drying period shall be provided by the treater and confirmation of compliance shall be recorded.
 - 16.5.6. Where a process uses other materials that are moisture or temperature sensitive (e.g. paints, adhesives, glazing materials) instructions shall be available to check and record the moisture content, temperature, coating weight or coating thickness. Where components or conditions are outside the necessary requirements instructions are to be available to enable appropriate steps to be taken.

- 16.5.7. The performance of the hardware relies on the correct fixings. Instructions shall be available identifying the correct hardware and fixings, including screw sizes and lengths.
- 16.5.8. Procedures for checking the correct opening light tolerances necessary for optimum performance of the weatherseals shall be available.
- 16.5.9. Where windows are to be produced to an enhanced security specification procedures are to be in place to ensure that not only the correct hardware and fixings is used but also that incorrect components cannot be used. Preferably this operation should take place in an isolated area.
- 16.5.10. Records of the labels fitted are to be retained for 10 years to ensure traceability.
- 16.6. A record of all actions and measurements taken shall be kept either in a central file system or with each individual order, at the manufacturer's discretion.

17. AUDIT REQUIREMENTS

- 17.1. Prior to acceptance into the Scheme a manufacturer shall provide the BWF Timber Window Accreditation Scheme Product Manager with a copy of all warranties, test reports, information sheets and product drawings. In addition where appropriate the manufacturer shall provide a copy of any window or doorset product catalogues. Following receipt of this information the Manufacturer shall be subject to a preliminary factory inspection. This inspection will consider the full production process from receipt of timber to release of products to the client.
- 17.2. Following acceptance into the Scheme all manufacturers shall, be subject to:-
 - 17.2.1. One annual inspection which shall be carried out by a body approved by the BWF and shall ensure full compliance with all the requirements of this scheme criteria; and
 - 17.2.2. One interim inspection, which is subject to a minimum 48hours notice, during which the actual physical characteristics of a window or doorset selected at random shall be assessed.
 - 17.2.2.1. Manufacturers claiming an Enhanced Security performance in compliance with clause 13.1 shall have a product sample subject to an audit test or assessment every 18 months or 6000 Enhanced Security product sales which ever shall occur first.

18. STORAGE

- 18.1. All products shall be stored under a ventilated opaque cover and protected at all times after manufacture.
- 18.2. Storage on site prior to installation shall be in accordance with either the manufacturer's instructions or the BWF 'Care of windows on site' information leaflet.
- 18.3. The manufacturer shall provide storage instructions with each order.

19. INSTALLATION

- 19.1. The window shall be installed in accordance with the 'BWF Installing timber windows' leaflet.
- 19.2. A full set of installation instructions shall be available as per the 'BWF Installing timber windows' leaflet.

Note: The position of the window frame within the depth of the wall can have a considerable effect on its long term performance. The deeper into the wall the window is installed the greater the protection provided by the outer leaf of the building.

20. OPERATING, CARE AND MAINTENANCE

- 20.1. Modern hinge and locking systems are becoming more sophisticated. Clear information shall be available for the user on the methods to be employed in operating each window or doorset system supplied.
- 20.2. The long term performance of any product is affected by the manner and care with which the maintenance is carried out. This information is to be clearly set out by the manufacturer and is to be made available for the user.

21. GENERAL INFORMATION SHEETS

- 21.1. The manufacturer shall provide storage, fitting and maintenance instructions with each order.
- 21.2. Information sheets providing guidance on typical information to be provided to builders and householders are available from the BWF.

APPENDIX A

TESTING AND CLASSIFICATION.

Note: A number test methods are being replaced by European test and classification documents. Where British Standard tests and classification documents are replaced by these European documents existing UKAS approved test results will be continued to be accepted for a period of 12 months from the date of the change.

A1 WEATHERTIGHTNESS

A1.1 The minimum window weathertightness performance shall be classified by testing using either:-

- (a) BS. EN 1026 Windows and doors – Air permeability – Test method
- BS. EN 1027 Windows and doors – Watertightness – Test method
- BS. EN 12211 Windows and doors –Resistance to wind load – Test method

The test procedures, sequence of tests and specific test requirements shall be in accordance with BS 6375 2004 "Performance of windows and doors: Part 1: Classification for weathertightness".

The classification level to be achieved shall be Exposure Category 2000, plus:
The window sample shall **also** achieve an air permeability level of 600 pa Class 4 as determined by BS EN 1026 using the positive pressure sequence (this additional requirement does not apply to vertical sliding sash windows).

Commentary: BS 6375 2004 requires the air permeability of the product to be tested under both negative and positive pressure sequences. For BS 6375 classification purposes the results are averaged at each pressure step. It is expected that in addition to the averaged results the test house will also provide the negative and positive results in both tabular and graphical format.

Step one of the Scheme requirement is for the Exposure Category to be based on this averaged result.

Step two of the Scheme is for the windows to meet the Class 4 classification up to 600Pa, but only under the positive pressure sequence.

The negative pressure results are also used to assess windows for their Energy Rating if required and may also be used to assess the product when contractors are carrying out pressure testing of their buildings as required by Building Regulations.

For windows to meet the requirements for its type all the tests levels indicated must be met or exceeded. A manufacturer may also specify the pass level that the window design has achieved.

A1.2 Entrance doorset weathertightness performance shall be classified by testing using either:-

- (a) Clause 5.2.4 of PAS 23-1999 Exposure category 800
- (b) Or alternatively tested in accordance with the requirements of:-
- BS. EN 1026 Windows and doors – Air permeability – Test method

BS. EN 1027 Windows and doors – Watertightness – Test method

BS. EN 12211 Windows and doors –Resistance to wind load – Test method

The test procedures, sequence of tests and specific test requirements shall be in accordance with BS 6375 2004 "Performance of windows and doors: Part 1: Classification for weathertightness".

The classification level to be achieved shall be Exposure Category 800, plus also achieving an air permeability level of 300 pa Class 2 as determined by BS EN 1026 using the positive pressure sequence.

A 2 OPERATIONAL TESTS

Operation and strength performance

A2.1 Windows shall be tested to and meet the requirements of BS 6375 'Performance of windows: Part 2: Specification for operation and strength characteristics'.

The performance of a window tested under the safety test, Test 6, as set out in BS 6375 Pt 2 will be considered acceptable if, following the test, it is not possible for a body to pass through the window. (Possibly measured by the use of the body block from BS 7950)

A2.2 Entrance doorsets shall tested to and meet the requirements, excluding clause 5.4.2, of PAS 23-1:1999 General performance requirements for door assemblies – Single leaf, external door assemblies to dwellings.

Note: The requirements of BS 6375 Part 2 and PAS 23 will be replaced by the tests and classes in the appropriate ENs.

A.3 ENHANCED SECURITY PERFORMANCE

- A3.1 Windows that are sold as providing an enhanced security capability shall be tested to and meet the requirements of BS 7950 test.
- A3.2 Entrance doorsets that are sold as providing an enhanced security capability shall be tested to and meet the requirements of PAS 24.

A.4 THERMAL PERFORMANCE

The thermal performance of a product may be determined by:

- (a) Testing the sample in a Hot-box in accordance with BS EN ISO 12567 1: 2000 or
- (b) By calculating the sample size using BS EN ISO 10077-1 or BS EN ISO 10077-2.

A.5 RECOMMENDED MINIMUM SPECIFICATION FOR A TYPE TEST WINDOW

