



FLAMEBREAK

Rev.D

About this Manual:

This Technical Manual has been prepared for Pacific Rim Wood Ltd., for use as guidance in the use of FLAMEBREAK™ Door Blanks.

This manual suggests methods for the use of FLAMEBREAK™ solid laminated wood cores as a base product for the manufacture of wooden doorsets to satisfy a wide range of design and performance requirements with reference to relevant British Standards.

NOTE: The contents of this manual shown with the 'Q' symbol are approved by reference to current fire test / assessment data for the manufacture of fire doors under the 'Q' Mark scheme administered by Chiltern International Fire Ltd. The content of this manual that is not marked with this symbol is advisory only and may not apply for fire door applications.

Enquiries and requests for technical support on the use of FLAMEBREAK™ Door Blanks should be referred to:

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The development of FLAMEBREAK™ door cores is an ongoing process. The information contained in this manual is current at the time of publication but may be changed without prior notice.

Any application not covered by this manual should be referred to our office for further guidance.

NOTE:

This manual is for guidance only. Pacific Rim Wood Ltd. do not accept any liability in tort or otherwise resulting from any failure of FLAMEBREAK™ based products to satisfy any project performance requirements or for any damage howsoever caused resulting from the use of FLAMEBREAK™ door cores.



Certificate Number 006/020



About 'Q Mark'

The 'Q' Mark Fire Door Scheme is a third party accreditation scheme designed to prove the worth of a manufacturer's products.

Manufacturers are required to have their products type tested and assessed to cover a product range. They then undergo periodic audits on their factory, with a full scale fire resistance test every three years.

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Flamebreak™ Technical Manual Rev.D Validation of Data against Global Assessment Reports

The specifications of all pages within this technical manual which are marked with a "Q" have been checked against the following Global Assessment reports and verified to be correct:

FEA/F98164 Rev J	Flamebreak™ 30 30 minute doorsets
FEA/F02141 Rev G	Flamebreak™ 60 60 minute doorsets

The data contained in the Q-Mark designated sections of this manual can therefore be utilised in the following ways, provided that both of the assessments listed above are still valid, and have not been updated, revised or withdrawn:

- 1) By a fabricator who does not hold 3rd party certification under the BM TRADA Q-Mark scheme to support the demonstration of conformance of their specification to the global assessment reports listed above. Whilst this may be acceptable for building regulations compliance, this does not infer 3rd party certification in any way and the final product will not be covered by 3rd party certification in this instance.
- 2) By a Q-Mark Fire Door Scheme Certified Fabricator in support of their certification provided that the fabricator has these Global Assessments included in their scope of certification.

Supplementary data also contained in this manual (in Appendices) which does not hold the "Q" symbol has not been approved by BM TRADA. This therefore may not be used in support of 3rd party certification under the BM TRADA Q-Mark fire door scheme.

Signed on behalf of
BM TRADA Certification Ltd

8th December 2011

Validation Date:

7th December 2014

Expiry Date:



- Section 1 - FLAMEBREAK™ General specifications & UK stock sizes.** including Health & Safety recommendations.
- Section 2 - FLAMEBREAK™ Fire Door Application data** ('Q' Mark approved dimensional application envelopes).
- Section 3 - Lippings & Facings** - Recommended materials & methods.
- Section 4 - Intumescent Seals** - Recommended seal types and seal location advice.
- Section 5 - Smoke Sealing** - Recommended seal types and seal location advice.
- Section 6 - Glazing** - Glass types with recommended beading options for fire rated doorsets.
- Section 7 - Frames** - Recommended minimum frame section dimensions with lists showing recommended softwood and hardwood species for fire door applications.
- Section 8 - Hardware** - Recommendations concerning the selection and use of hardware with fire rated and other doorsets.
- Section 9 - Coordination** - Recommendations for the coordination of doorsets; doors / frames and doorsets with surrounding structures.
- Section 10 & 10a - Acoustics** - Recommendations and guidance for the use of FLAMEBREAK™ cores for satisfying sound attenuating performance requirements with tested and assessed performance data.
- Section 11 - Mechanical Performance** - DD171, BS EN 1192, PAS23 & PAS24 related performance data and guidance.
- Section 12 - Thermal Insulation** - Guidance for the use of FLAMEBREAK™ door cores for satisfying 'U' value performance requirements.
- Section 13 - External Doors** - Recommendations and guidance for the use of FLAMEBREAK™ cores for use in external locations.
- Section 14 - Fire Door Installation** - Recommendations and guidance for the installation of fire rated doorsets.
- Section 15 - FSC Certified FLAMEBREAK™** - Information and guidance for the specification of FSC certified FLAMEBREAK™ door cores.
- Section 16 - Appendices:**
- Appendix 1a.** Recommended environmental conditions for maintaining the moisture content of FLAMEBREAK™ door cores during storage & use.
 - Appendix 1b.** Recommended hinge and installation fixings locations.
 - Appendix 1c.** Suggested doorset installation procedure.
 - Appendix 1d.** Suggested maintenance for FLAMEBREAK™ based door leaves.
 - Appendix 2.** ASDMA Document - Pre-Installation, Preparation, Site Reception, Handling, Storage & Installation advice relating to wood doorsets.
 - Appendix 3.** ASDMA Document - Maintenance, Damage Prevention & Troubleshooting advice relating to wood doorsets.
 - Appendix 4.** UKAS approved 3rd. party certification providers.
 - Appendix 5.** Doorset component suppliers - brochures.
 - Appendix 6.** Flamebreak Certificates



- Pacific Rim Wood Ltd. provides for a worldwide sales and distribution service for wood products manufactured by P.T. Kutai Timber Indonesia including a range of FLAMEBREAK™ door core products.
- The basic core construction consists of three layers of cross banded lamels contributing to exceptional dimensional stability.
- The core construction includes a concealed framing to all four edges with the top and bottom framing elements tongue and groove jointed to the core structure.
- The core material consists of a light weight fast growing tropical hardwood of approx. 300Kgs/m³ density. The timber for the core is harvested from forests that are managed to provide for reforestation under the control of an ISO14001 Environmental Management System supported by chain of custody certification.
- The core framing material is made up of mixed tropical hardwoods of approx. 480Kgs/m³ density. The framing is finger jointed to make economical use of timber from other processes that would otherwise be wasted.
- FLAMEBREAK 30™ Door Blanks are provided with optional facings as follows:
 - 4mm Plywood.
 - 6mm Plywood.
 - 6mm Medium Density Fibreboard.
- FLAMEBREAK 60™ Door Blanks are provided with optional facings as follows:
 - 6mm Plywood.
 - 6mm Medium Density Fibreboard.
- Individual core blocks are assembled with a PVA adhesive and the three layer core lamels are bonded using a Melamine Urea adhesive system. Facings are applied to the core assembly with a melamine adhesive. Blank assemblies have been subjected to Soak Delaminating Tests and are suitable for external use, subject to the application of suitable finishing systems.
- FLAMEBREAK™ Door blanks have been subjected to a number of BS476 Pt.22 fire resistant tests with and without additional lippings and have a proven performance for a wide range of FD30 (half hour fire resistance) and FD60 (one hour fire resistance) applications. More recently, doorsets based upon the use of FLAMEBREAK™ cores have been successfully tested to the requirements of BS EN 1634-1: 2000 providing for confidence that 44mm FLAMEBREAK™ cores have the potential to provide for a stable door core product for the development of CE marked doorset designs for half hour fire door applications.
- FLAMEBREAK™ Door blanks can be faced with a wide range of decorative facing materials, e.g. decorative veneers, laminates PVC etc.
- Doors manufactured using FLAMEBREAK™ Door Blanks can be glazed using an extensive range of glass and beading systems.
- The solid wooden core construction of FLAMEBREAK™ Door Blanks provides for fixing of a wide range of ironmongery items. For fire rated doorsets, reference should be made to BS8214 : 2008 and the related ABHM & Guild of Architectural Ironmongers Code of Practice. 'Hardware for Timber Fire and Escape Doors'.



Handling & Storage:

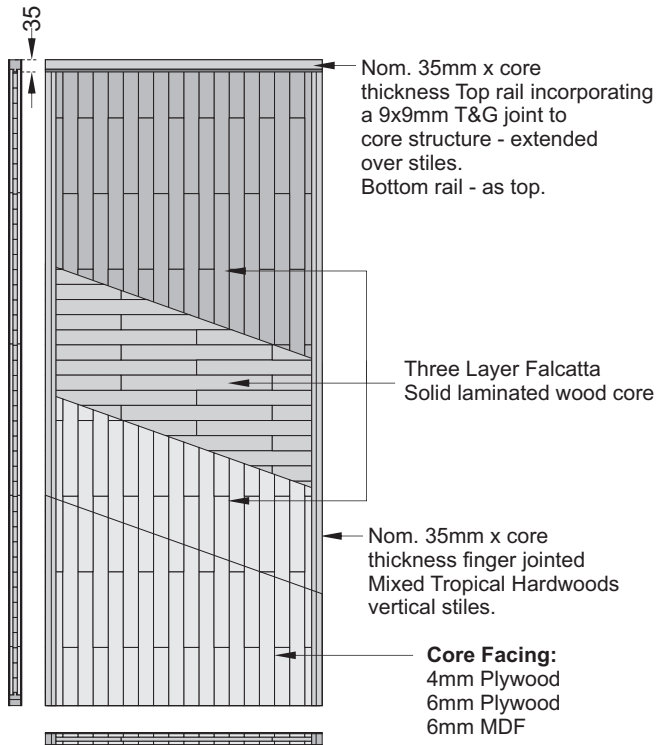
- When handling FLAMEBREAK™ Door Blanks with forklift trucks or other mechanised handling equipment, care should be taken to observe the safety advice and weight restrictions related to the equipment.
- When manually handling, operatives should wear suitable industrial quality gloves to avoid injury.
- FLAMEBREAK™ Door Blanks should be stored under clean dry conditions similar in ambient condition to that intended for further production.
- Areas for storing FLAMEBREAK™ Door Blanks should be dry and adequately ventilated such that the Blanks are not subjected to excessive humidity and temperature.
- FLAMEBREAK™ Door Blanks should be stored flat in packaging as delivered. The lower bundle should be stored on a flat and level base supported by a minimum of 4No. equi-spaced timber bearers. Additional bundles may be stacked on top of a base bundle with each bundle separated by equi-spaced bearers to a maximum recommended height of 5 bundles per stack. Where varying size blanks are stored, the larger size blanks should be positioned at the bottom of the stack reducing to the smaller size blanks at the top of a stack.

Health & Safety:

- When worked, it is likely that the Door Blanks will produce wood dust that can act as a skin or respiratory irritant. Adequate ventilation and dust waste extraction should be provided for in the workplace. **NOTE: Refer to COSHH Regulations 1988 and Guidance Note EH40/89.**
- Ori-nasal masks to BS EN 149 and eye shields to BS EN 166 ~ 168 are recommended for use by operatives involved in the handling and working of FLAMEBREAK™.
- **In the event of exposure resulting in injury to persons the following first aid recommendations are suggested:**
 - ☐ **Inhalation of Wood Dust:** Remove person to fresh air. Clean nasal passages.
 - ☐ **Wood Dust in Eyes:** Flush eyes with tepid clean water for 15mins.
 - ☐ **If no recovery is made:** Seek immediate medical advice.

Fire & Explosion:

- FLAMEBREAK™ Door Blanks will not explode but airborne dust particles released when working the blanks could present a fire hazard. Smoking and the use of naked flames should not be permitted in work areas.
- The work area should be provided with an efficient and continuous dust extraction system.
- FLAMEBREAK™ Door Blanks are solid wood products. Normal wood fire fighting procedures should be adopted in the event of fire.



FLAMEBREAK™ Door Blanks

Manufacturing tolerances:

- Thickness = + or - 0.5mm
- Height & Width = + or - 2mm
- Squareness = + or - 0.3mm

Component	Species / Type		Configuration	Min. density (kg/m ³)
Core	Parasorianthes falacateria or Albisia falcatta or Orchroma pyramidale		3 layers of lamels laid in alternate directions - grooved to accept the stiles and rails	140 ~ 360 (average 210)
Stiles	Mixed tropical hardwood	Leaf size ≤ 2440(h) x 1220 (w)	1 No. 32 ~ 36 thick (depending on facing thickness) x 35 deep, incorporating a 9x9 tongue to locate into the core material.	480
		Leaf size ≤ 2135(h) x 915 (w)	1 No. 32 ~ 36 thick (depending on facing thickness) x 35 deep.	480
Top & Bottom Rails	Mixed tropical hardwood		1 No. 32 ~ 36 thick (depending on facing thickness) x 35 deep, incorporating a 9x9 tongue to locate into the core material.	480
Core Facings	FLAMEBREAK 430 FLAMEBREAK 630 FLAMEBREAK FF630		Nom. 3mm Plywood. Nom. 6mm Plywood. Nom. 6mm MDF.	Various

WARNING:

For fire door applications, the top rail that forms part of the core structure, must generally be retained with a maximum trimming allowance of 3mm.

The core may be reduced in width from either or both stiles. Height reductions are limited to the reduction or removal of the bottom rail only.

NOTE:

Flamebreak cores in excess of 2745mm high are supplied without top and bottom rails.

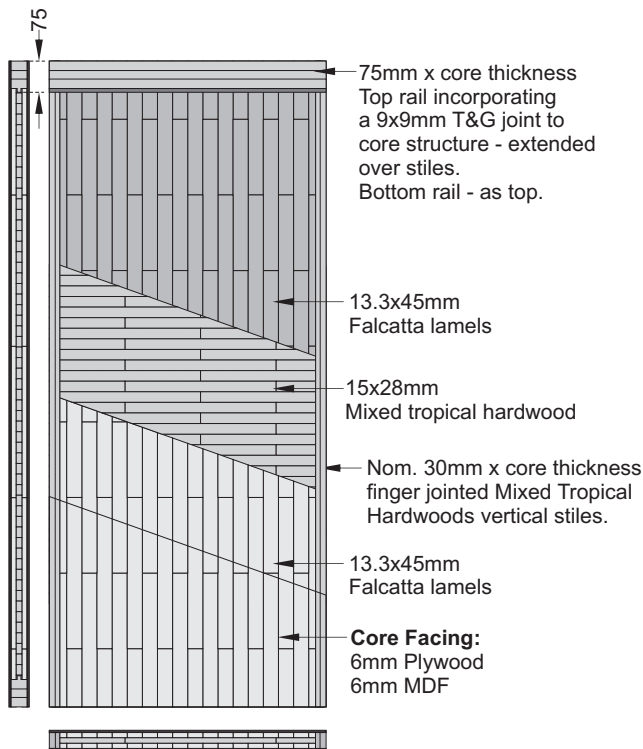
Flamebreak 430 cores only may be used for fire door applications without the top rail but applications are limited to latched, single leaf, single swing configurations with 25x4mm Lorient 617 being the only approved intumescent material for this application.

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General Construction 54mm FLAMEBREAK™



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FLAMEBREAK 660™

Manufacturing tolerances:

Thickness = + or - 0.5mm

Height & Width = + or - 2mm

Squareness = + or - 0.3mm

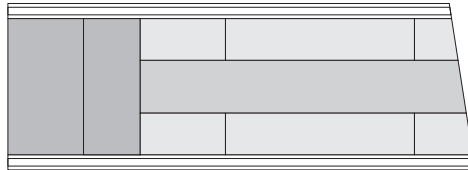
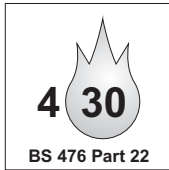
Component	Species / Type	Configuration	Min. density (kg/m ³)
Core Outer layers	Parasorianthes falacateria or Albisia falcatta	Vertically oriented 13.5 thick x 45 wide lamels.	180 ~ 360
Core Inner layer	Mixed tropical hardwood	Horizontally oriented 15 thick x 28 wide lamels.	480
Stiles	Agathis or mixed tropical hardwood - in 2 lamels	35 wide (total) x 42 thick incorporating a 9 wide x 9 deep tongue into the core.	Agathis - 480 or mixed tropical hardwood - 610
Top Rail	Agathis or mixed tropical hardwood - in 2 lamels	75 wide (total) x 42 thick incorporating a 9 wide x 9 deep tongue into the core.	Agathis - 480 or mixed tropical hardwood - 610
Bottom Rail	Agathis or mixed tropical hardwood - in 2 lamels	35 wide (total) x 42 thick incorporating a 9 wide x 9 deep tongue into the core.	Agathis - 480 or mixed tropical hardwood - 610
Core Facings	FLAMEBREAK 660 FLAMEBREAK FF660	Nom. 6mm Plywood. Nom. 6mm MDF.	Various

WARNING:

For fire door applications, the 75 mm top rail that forms part of the core structure must be retained with a maximum trimming allowance of 3mm.

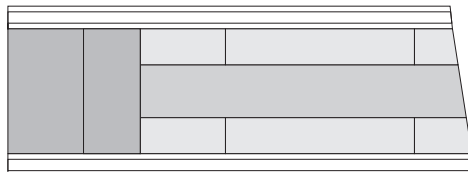
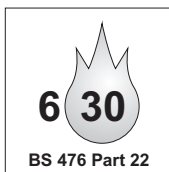
The core may be reduced in width from either or both stiles. Height reductions are limited to the reduction or removal of the bottom rail only.

Additionally, for FD60 (one hour fire door) applications, doors must be hardwood lipped on all edges.



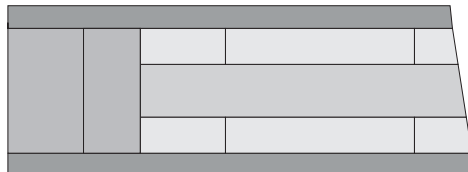
FLAMEBREAK Type 430

Nom. 44mm fin. thickness. Faced with 4mm long grain plywood.
 Suitable for external use.
 Suitable for fire door applications.
 Suitable for Acoustic door applications.
 Suitable for PAS23 & PAS24 applications.
 Suitable for Thermal Insulation applications.
 Avg. Density: $370\text{Kgs/m}^3 = \text{approx: } 16.4\text{Kgs/m}^2$



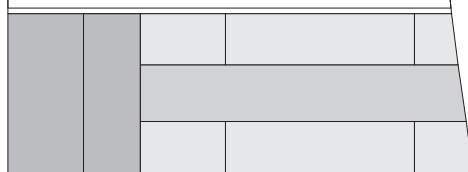
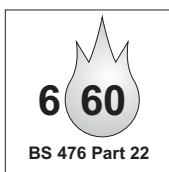
FLAMEBREAK Type 630

Nom. 45mm fin. thickness. Faced with 6mm long grain plywood.
 Suitable for external use.
 Suitable for fire door applications.
 Suitable for Acoustic door applications.
 Suitable for PAS23 & PAS24 applications.
 Suitable for Thermal Insulation applications.
 Avg. Density: $380\text{Kgs/m}^3 = \text{approx: } 16.9\text{Kgs/m}^2$



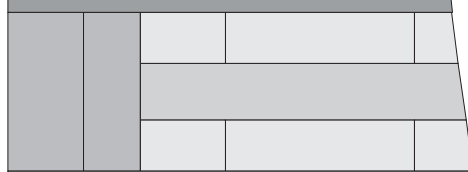
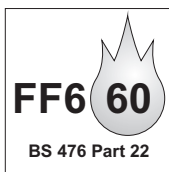
FLAMEBREAK Type FF630

Nom. 44mm fin. thickness. Faced with 6mm Medium Density Fibreboard.
 Suitable for internal painted doors and for facing with veneers or other decorative finishes.
 Suitable for fire door applications.
 Suitable for Acoustic door applications.
 Suitable for PAS23 & PAS24 applications.
 Suitable for Thermal Insulation applications.
 Avg. Density: $470\text{Kgs/m}^3 = \text{approx: } 21\text{Kgs/m}^2$



FLAMEBREAK Type 660

Nom. 54mm fin. thickness. Faced with 6mm long grain plywood.
 Suitable for internal or external use.
 Suitable for fire door applications.
 Suitable for Acoustic door applications.
 Suitable for PAS23 & PAS24 applications.
 Suitable for Thermal Insulation applications.
 Avg. Density: $380\text{Kgs/m}^3 = \text{approx: } 20.5\text{Kgs/m}^2$



FLAMEBREAK Type FF660

Nom. 54mm fin. thickness. Faced with 6mm Medium Density Fibreboard.
 Suitable for internal use.
 Suitable for fire door applications.
 Suitable for Acoustic door applications.
 Suitable for PAS23 & PAS24 applications.
 Suitable for Thermal Insulation applications.
 Avg. Density: $380\text{Kgs/m}^3 = \text{approx: } 20.5\text{Kgs/m}^2$



44mm FLAMEBREAK™

Door Cores:

FLAMEBREAK™ 430

44mm Thickness
4mm Plywood face.
Paint Grade.

Height mm	Width mm	Pack Qty.
3050	1220	14No.
2820	1220	14No.
2745	915	14No.
2440	1220	22No.
2440	915	22No.
2135	1220	22No.
2135	915	22No.
2058	838	22No.
2032	813	22No.
1981	838	22No.
1981	762	22No.

FLAMEBREAK™ UK Stock Sizes:

The following FLAMEBREAK™ cores are generally available for delivery from stocks held in the United Kingdom. Alternative size cores may be manufactured to special order.

FLAMEBREAK™ Door Blanks are also stocked in the United Kingdom with hardwood lippings factory applied to all edges. Consult stockist for further details.

FLAMEBREAK™ 630

45mm Thickness
6mm Plywood face.
Paint Grade.

Height mm	Width mm	Pack Qty.
2135	915	22No.

FLAMEBREAK™ FF630

44mm Thickness
6mm MDF face.

Height mm	Width mm	Pack Qty.
2440	1220	22No.
2135	915	22No.
2058	838	22No.

NOTE 1: FLAMEBREAK™ Door blanks in the following dimensions have scarf jointed faces: 3050x1220mm, 2820x1220mm, 2745x915mm

NOTE 2: 3050mm & 2820mm high cores supplied without top rail - See page 3

54mm FLAMEBREAK™ Door Cores:

FLAMEBREAK™ 660

54mm Thickness
6mm Plywood face.
Paint Grade.

Height mm	Width mm	Pack Qty.
2440	1220	18No.
2135	915	18No.

FLAMEBREAK™ FF660

54mm Thickness
6mm MDF face.

Height mm	Width mm	Pack Qty.
2440	1220	18No.
2135	915	18No.

FSC Certified 44mm FLAMEBREAK™ Door Cores:

FLAMEBREAK™ 430FSC

44mm Thickness
4mm Plywood face.
Paint Grade.

Height mm	Width mm	Pack Qty.
2440	1220	22No.
2135	915	22No.

FLAMEBREAK™ FF630FSC

44mm Thickness
6mm MDF face.

Height mm	Width mm	Pack Qty.
2440	1220	22No.
2135	915	22No.

FSC Certified 54mm FLAMEBREAK™ Door Cores:

FLAMEBREAK™ 660FSC

54mm Thickness
6mm Plywood face.
Paint Grade.

Height mm	Width mm	Pack Qty.
2440	1220	18No.
2135	915	18No.

FLAMEBREAK™ FF660FSC

54mm Thickness
6mm MDF face.

Height mm	Width mm	Pack Qty.
2440	1220	18No.
2135	915	18No.

NOTE: Stock sizes identified above are current at the time of publication but may vary according to demand.