



Fire assessment report

Hume doors in accordance with AS 1530.8.1:2007

Sponsor: Hume Doors & Timbers (Aust) Pty Ltd, Hume Doors & Timber (VIC) Pty Ltd, Hume Doors & Timber (QLD) Pty Ltd, Hume Doors & Timber (SA) Pty Ltd, Hume Doors & Timber (WA) Pty Ltd

Report number: 27182 Revision: R5.2 Reference number: FAS220269

Issued date: 13 December 2022 Expiry date: 31 October 2027



Quality management

| Version | Date | Information | n about the report | | | |
|----------|-----------------------|---------------------|--|-------------------------------|---------------|--|
| 27182-00 | lssue: 25 Jun 2012 | Reason for issue | Initial issue | | | |
| | | | Prepared by | Reviewed by | Authorised by | |
| | | Name | K Nicholls | S. Hu | - | |
| 27182-01 | lssue: 26 Jun 2012 | Reason for issue | Revise variation in | Revise variation in section 3 | | |
| | | | Prepared by | Reviewed by | Authorised by | |
| | | Name | K Nicholls | S. Hu | - | |
| 27182-02 | Issue: 17 Sep 2012 | Reason for issue | Revised to include | various glass option | | |
| | | | Prepared by | Reviewed by | Authorised by | |
| | | Name | K Nicholls | S. Hu | - | |
| 27182-03 | Issue: 19 Sep 2012 | Reason for issue | Typographical ame | Typographical amendments | | |
| | | | Prepared by | Reviewed by | Authorised by | |
| | | Name | K Nicholls | S. Hu | - | |
| 27182-04 | Issue: 16 May 2017 | Reason for issue | Revalidation | | | |
| | | | Prepared by | Reviewed by | Authorised by | |
| | | Name | Omar Saad | Hon Wong | - | |
| R5.0* | Issue: 19 Oct 2022 | Reason for issue | Renewed for additional 5 years | | | |
| | | | Prepared by | Reviewed by | Authorised by | |
| | | Name | Alim Rasel | Omar Saad | Mahmoud Akl | |
| R5.1 | Issue: 03 Nov 2022 | Reason for issue | Updated with the inclusion of new glazing type | | | |
| | | | Prepared by | Reviewed by | Authorised by | |
| | | Name | Alim Rasel | Omar Saad | Omar Saad | |
| R5.2 | Issue: 13 Dec 2022 | Reason for issue | Updated with amendments to glazing type | | e | |
| | | | Prepared by | Reviewed by | Authorised by | |
| | Expiry: | Name | Alim Rasel | Omar Saad | Omar Saad | |
| | 31 Oct 2027 | Signature | Aster Starel | All . | ALL. | |

*R1.0–R4.0 were skipped to maintain consistency with previous numbering.



Executive summary

This report documents the findings of the assessment undertaken to determine the expected fire hazard properties of Hume Pivot Entry door and Hume Hinged Entry doors in accordance with AS 1530.8.1:2007.

The analysis in section 5 of this report found that the proposed systems, together with the described variations, are expected to achieve the Bushfire Attack Level (BAL) shown in Table 1 - in accordance with AS 1530.8.1:2007.

The variations and outcome of this assessment are subject to the limitations and requirements described in sections 2, 3 and 6 of this report. The results of this report are valid until 31 October 2027.

| Product | Reference tests | Variations | Bushfire attack level |
|------------------------|--|---|-----------------------|
| Hume Pivot Entry door | EWFA 2705200.1, | As listed in Table 4. The assessed | BAL A – 12.5 |
| Hume Hinged Entry door | EWFA 2705201.1, EWFA 2705203.1, EWFA 2705202.1 | construction is tabulated and illustrated in section 4.5. | |

Table 1 Variations and assessment outcome

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1. Introduction

This report documents the findings of the assessment undertaken to determine the expected fire hazard properties of Hume Pivot Entry door and Hume Hinged Entry door in accordance with AS 1530.8.1:2007¹.

This report may be used as evidence of suitability in accordance with the requirements of the relevant National Construction Code (NCC) to support the use of the material, product, form of construction or design as given within the scope of this assessment report. It also references test evidence for meeting deemed to satisfy (DTS) provisions of the NCC that apply to the assessed systems.

This assessment was carried out at the request of Hume Doors & Timbers (Aust) Pty Ltd, Hume Doors & Timber (VIC) Pty Ltd, Hume Doors & Timber (QLD) Pty Ltd, Hume Doors & Timber (SA) Pty Ltd, Hume Doors & Timber (WA) Pty Ltd. The sponsor details are included in Table 2.

| Sponsor | Address |
|------------------------------------|--|
| Hume Doors & Timber (Aust) Pty Ltd | 120 Hume Highway Lansvale NSW 2166 |
| Hume Doors & Timber (VIC) Pty Ltd | 33 Remington Drive South Dandenong VIC 3175 |
| Hume Doors & Timber (QLD) Pty Ltd | 86 – 92 Mudgee Street Kingston, QLD 4114 |
| Hume Doors & Timber (SA) Pty Ltd | 89 Heaslip Road Burton, SA 5110 |
| Hume Doors & Timber (WA) Pty Ltd | 75 Briggs Street Carlisle WA 6101 |

Table 2 Sponsor details

2. Framework for the assessment

2.1 Assessment approach

An assessment is an opinion about the expected performance of a component or element of structure subjected to a fire test.

No specific framework, methodology, standard or guidance documents exists in Australia for undertaking these assessments. We have therefore followed the 'Guide to undertaking technical assessments of the fire performance of construction products based on fire test evidence' prepared by the Passive Fire Protection Forum (PFPF) in the UK in 2021².

This guide provides a framework for undertaking assessments in the absence of specific fire test results. Some areas where assessments may be offered are:

- Where a modification is made to a construction which has already been tested
- The interpolation or extrapolation of results of a series of fire resistance tests, or utilisation of a series of fire test results to evaluate a range of variables in a construction design or a product
- Where, for various reasons eg size or configuration it is not possible to subject a construction or a product to a fire test.

Standards Australia, 2007, Methods for fire tests on building materials, components and structures – Part 8.1: Tests on elements of construction for buildings exposed to simulated bushfire attack – Radiant heat and small flaming sources, AS 1530.8.1:2007, Standards Australia, NSW.

² Passive Fire Protection Forum (PFPF), 2021, Guide to undertaking technical assessments of the fire performance of construction products based on fire test evidence, Passive Fire Protection Forum (PFPF), UK.



Assessments can vary from relatively simple judgements on small changes to a product or construction through to detailed and often complex engineering assessments of large or sophisticated constructions.

This assessment uses established empirical methods and our experience of fire testing similar products to extend the scope of application by determining the limits for the design based on the tested constructions and performances obtained. The assessment is an evaluation of the potential fire hazard properties of the elements in accordance with AS 1530.8.1:2007.

This assessment has been written using appropriate test evidence generated at accredited laboratories to the relevant test standard. The supporting test evidence has been deemed appropriate to support the manufacturer's stated design.

2.2 Compliance with the National Construction Code

This assessment report has been prepared to meet the evidence of suitability requirements of the NCC 2019, including amendments³ under A5.2 (1) (d).

This assessment has been written in accordance with the general principles outlined in EN 15725:2010⁴ for extended application reports on the fire performance of construction products and building elements.

This assessment report may also be used to demonstrate compliance with the requirements for evidence of suitability under NCC 2016, including amendments⁵.

2.3 Declaration

The 'Guide to undertaking technical assessments of the fire performance of construction products based on fire test evidence' prepared by the PFPF in the UK requires a declaration from the client. By accepting our fee proposal on 17 August 2022, Hume Doors & Timbers (Aust) Pty Ltd, Hume Doors & Timber (VIC) Pty Ltd, Hume Doors & Timber (QLD) Pty Ltd, Hume Doors & Timber (SA) Pty Ltd, Hume Doors & Timber (WA) Pty Ltd confirmed that:

- To their knowledge, the variations to the component or element of structure, which is the subject of this assessment, have not been subjected to a fire test to the standard against which this assessment is being made.
- They agree to withdraw this assessment from circulation if the component or element of structure is the subject of a fire test by a test authority in accordance with the standard against which this assessment is being made and the results are not in agreement with this assessment.
- They are not aware of any information that could adversely affect the conclusions of this assessment and if they subsequently become aware of any such information they agree to ask the assessing authority to withdraw the assessment.

3. Limitations of this assessment

- The scope of this report is limited to an assessment of the variations to the tested systems described in section 4.3.
- This report details the methods of construction, test conditions and assessed results expected in accordance with AS 1530.8.1:2007.
- This assessment applies to hinged doors opening away and pivot doors opening towards the radiant heat source.
- This report is only valid for the assessed systems and must not be used for any other purpose. Any changes with respect to size, construction details, loads, stresses, edge or end

³ National Construction Code Volumes One and Two - Building Code of Australia 2019 including Amendments, Australian Building Codes Board, Australia

⁴ European Committee for Standardization, 2010, Extended application reports on the fire performance of construction products and building elements, EN 15725:2010, European Committee for Standardization, Brussels, Belgium.

⁵ National Construction Code Volumes One and Two - Building Code of Australia 2016 including Amendments, Australian Building Codes Board, Australia



conditions – other than those identified in this report – may invalidate the findings of this assessment. If there are changes to the system, a reassessment will need to be done by an Accredited Testing Laboratory (ATL) that is accredited to the same nominated standards of this report.

- The documentation that forms the basis for this report is listed in Appendix A.
- This report has been prepared based on information provided by others. Warringtonfire has not verified the accuracy and/or completeness of that information and will not be responsible for any errors or omissions that may be incorporated into this report as a result.
- This assessment is based on the proposed systems being constructed under comprehensive quality control practices and following appropriate industry regulations and Australian Standards on quality of materials, design of structures, guidance on workmanship and expert handling, placing and finishing of the products on site. These variables are beyond the control and consideration of this report.

4. Description of the specimen and variations

4.1 Description of assessed system

The proposed system includes Pivot Entry door and Hinged Entry door in a timber framed plasterboard cladded wall system. The door leaf will include glazing as illustrated in Table 9. The glazing type can optionally be 6.38 mm clear laminated glass, 6.38 mm translucent laminated glass or 4 mm thick toughened glass. The smaller apertures may also be glazed with 5 mm Clear Float glass, 5 mm Slumped Float glass, 5 mm Cathedral Float glass, 5 mm Coloured Frost glass, 5 mm Frost glass, 5 mm Rice Paper glass, 5 mm Grey Tint glass, 5 mm Africana glass or 5 mm Satinlite Frost glass.

4.2 Referenced test data

The assessment of the variation to the tested systems and the determination of the expected performance is based on the results of the fire tests documented in the reports summarised in Table 3. Further details of the tested systems are included in Appendix A.

| Report number | Test sponsor | Test date | Testing authority |
|----------------|---|---------------|-------------------|
| EWFA 2705200.1 | Hume Doors & Timber (Aust) Pty Ltd, | 23 March 2012 | Warringtonfire |
| EWFA 2705201.1 | Hume Doors & Timber (VIC) Pty Ltd, | 18 May 2012 | |
| EWFA 2705203.1 | Hume Doors & Timber (QLD) Pty Ltd, Hume Doors & Timber (SA) Pty Ltd, and | 10 July 2012 | |
| EWFA 2705202.1 | Hume Doors & Timber (WA) Pty Ltd. | 11 July 2012 | |

Table 3 Referenced test data

4.3 Variations to the tested systems

The tested systems and variations to those tested system/s – together with the referenced standard fire tests – are described in Table 4.



| | | otom | |
|-------------------------|---|---|---|
| ltem | Reference test | Description | Variations |
| Doorset construction | EWFA 2705200.1, EWFA 2705201.1, EWFA 2705203.1, EWFA 2705202.1 | The single leaf Pivot Entry door and Hinged Entry door were tested in the reference tests in various configurations. | It is proposed that Pivot Entry door will be constructed as tested in EWFA 2705201 door A and Hinged Entry door will be constructed as tested in EWFA 2705201 door B. The additional variations listed in this table can also be incorporated. The construction details are tabulated and illustrated in section 4.5. |
| Framing | | Pivot Entry door and Hinged Entry door were tested with framing as detailed in EWFA 2705200.1 and EWFA 2705201.1. | It is proposed that the framing will be interchanged between Pivot Entry door and Hinged Entry doors. Accordingly, the doorstop at the head will be removed from the Pivot entry door and added for the Hinged Entry door. |
| Glazing type | | A range of glazing types have been tested in the reference tests. | It is proposed that the glazing types will be any of the following: VER1, VER2, VER4, VER6, VER8, VER11, XN1, XN2, XN5, XN11, XN6, XN12, XN7, XN9, XN14, XN13, XN16, XN18, HAV22, HAV44, HAV45, HAV66, HAV67, HAV88, HAV89, HAV99, HAV100, NEX10, NEX15L, NEX15R, NEX20, NEX100, NEX30, NEX35, NEX36, NEX38, NEX40, XU7, XU10, XU14, XU20, XU22, XU15, XV1, XV4, XV5, XV8, XV9, XV10, XV14, XV18, XV20, XCB1, XCB2, VEN 1, VEN3, XR1, XR2, XR4, XR5, XR6, XVP5, XVP6, XVP10, XVP11, XVP12, XVP13, XVP14, XVP20, XVP22, XGE4, XGE5, XG6, XGE8, XS2, XS3, XS4, XS11, XS24, XS26, XS28, XS45, XLR120, XLR130, XLR140, XLR150, XLR160, XLR170, XLR300, XLR310, XLR500, XLR600, XLR700, JST1, JST5, JST6, XL2, XL3, XL4, XL8, XL10, XIL1, XIL6, XIL21, XIL26.They are illustrated in Table 9 |
| Glazing option | | The doorsets were tested with a range of glazing options. | It is proposed that fully glazed doors and sidelights will be glazed with either 6.38 mm clear laminated glass, 6.38 mm translucent laminated glass or 4 mm thick toughened glass. Additionally, small apertures will be glazed with 5 mm Clear Float glass, 5 mm Slumped Float glass, 5 mm Cathedral Float glass, 5 mm Coloured Frost glass, 5 mm Frost glass, 5 mm Rice Paper glass, 5 mm Grey Tint glass, 5 mm Africana glass or 5 mm Satinlite Frost glass. |
| Glazed area | | An aperture protected with 6.38 mm clear laminated glass was tested with a 1.31 m ² glazed area. In addition, an aperture protected with 5 mm clear float. 5 mm slumped float | It is proposed that the pane area of the aperture protected with 6.38 mm clear laminated glass, 6.38 mm translucent laminated glass or 4 mm thick toughened glass will be limited to 1.45 m ² . Additionally, the pane |

Table 4Variation to tested system

warringtonfire

| ltem | Reference test | Description | Variations |
|--------|----------------|---|--|
| | | and 5 mm cathedral float glass was tested with 0.07 m ² of glazed area. | area of the aperture protected with 5 mm Clear Float glass, 5 mm Slumped Float glass, 5 mm Cathedral Float glass, 5 mm Coloured Frost glass, 5 mm Frost glass, 5 mm Rice Paper glass, 5 mm Grey Tint glass, 5 mm Africana glass or 5 mm Satinlite Frost glass will be limited to 0.08 m ² . |
| Facing | | The doorsets were tested with hardboard and solid pine facing. | It is proposed the facing be alternatively replaced with hardboard, plywood or MDF. |
| Seals | | Pivot door was tested with Lorient IS3020si top seal, Schlegel AQ21 side seal (AQ21BR) and Lorient IS3022si bottom seal. Additionally, the Hinged door was tested with Schlegel AQ21 (AQ21BR) top seal and side seal and Lorient IS8035si bottom seal. | It is proposed that the Pivot door will include a Lorient IS3022si bottom seal, an AQ21BR side seal and a Lorient IS3020si top seal. Additionally, Hinged door will include a Lorient IS3022si bottom seal and an AQ21BR sides and top seal. |

4.4 Test standard

AS 1530.8.1:2007 stipulates the testing requirement on element of construction for buildings exposed to simulated bushfire attack – Radiant heat and small flaming sources.

4.5 Schedule of components

Table 5 and Table 7 outlines the schedule of components for the assessed systems. The proposed construction is further illustrated in Table 6, Table 8 and Table 9.

4.5.1 Pivot Entry door

Table 5 Schedule of construction of the assessed system–Pivot Entry door

| ltem | Description | | | | | |
|------|--------------|---|---------------------------------------|--|--|--|
| 1 | Name | Pivot door leaf | | | | |
| | Size | Up to 2700 mm high and up to 1200 mm v | vide | | | |
| | Door core | 32 mm thick MDF | | | | |
| | Door facings | 3 mm thick hardboard, plywood or MDF facing | | | | |
| 2 | Name | Glazing | | | | |
| | Material | Material Maximum pane area | | | | |
| | | 6.38 mm clear laminated glass | 1.45 m ² | | | |
| | | 6.38 mm translucent laminated glass | | | | |
| | | 4 mm toughened glass | | | | |
| | | 5 mm Clear Float glass | 0.08 m ² | | | |
| | | 5 mm Slumped Float glass | - | | | |
| | | 5 mm Cathedral Float glass | - | | | |
| | | 5 mm Coloured Frost glass | - | | | |
| | | 5 mm Frost glass | - | | | |
| | | 5 mm Rice Paper glass | - | | | |
| | | 5 mm Africana glass | - | | | |
| | | 5 mm Satiplite Frost class | - | | | |
| | Installation | VERT, VER2, VER4, VER6, VER8, VERT1, XN1, XN2, XN5, XN11, XN6, XN12, XN7, XN9, XN14, XN13, XN16, XN18, HAV22, HAV44, HAV45, HAV66, HAV67, HAV88, HAV89, HAV99, HAV100, NEX10, NEX15L, NEX15R, NEX20, NEX100, NEX30, NEX35, NEX36, NEX38, NEX40, XU7, XU10, XU14, XU20, XU22, XU15, XV1, XV4, XV5, XV8, XV9, XV10, XV14, XV18, XV20, XCB1, XCB2, VEN 1, VEN3, XR1, XR2, XR4, XR5, XR6, XVP5, XVP6, XVP10, XVP11, XVP12, XVP13, XVP14, XVP20, XVP22, XGE4, XGE5, XG6, XGE8, XS2, XS3, XS4, XS11, XS24, XS26, XS28, XS45, XLR120, XLR130, XLR140, XLR150, XLR160, XLR170, XLR300, XLR310, XLR500, XLR600, XLR700, JST1, JST11, JST4, JST12, JST2, JST10, JST5, JST6, XL2, XL3, XL4, XL8, XL10, XIL1, XIL6, XIL21, XIL26. These are illustrated in Table 9. | | | | |
| | | perimeter of the pane. | | | | |
| 3 | Name | Top seal | | | | |
| | Material | Lorient IS3020si | | | | |
| | Installation | Fitted to door frame or leaf | | | | |
| 4 | Name | Side seal | | | | |
| | Material | AQ21BR | | | | |
| | Installation | Fitted to slot in the door stop on the frame | | | | |
| 5 | Name | Bottom seal | | | | |
| | Material | Lorient IS3022si | | | | |
| | Installation | Fitted to bottom of the door. | | | | |
| 6 | Name | Door frame | | | | |
| | Material | "Meranti" timber | | | | |
| | Density | Minimum 421 kg/m ³ | | | | |
| | Installation | As tested in EWFA 2705200.1 and 27052 | 01.1 | | | |
| 7 | Separating | Timber stud framed plasterboard cladded | wall system as tested in as tested in | | | |
| | element | EWFA 2705200.1 and 2705201.1. | | | | |





Figure 1 Representative Pivot Entry door construction

| Table 6 Proof Entry frame size and arrangeme | Table 6 Piv | ot Entry | frame s | size an | d arrangemen | t |
|--|-------------|----------|---------|---------|--------------|---|
|--|-------------|----------|---------|---------|--------------|---|

| Arrangement | Up to frame width (mm) |
|-------------------------|------------------------|
| Uutside Outside | 1265 + / - 5mm |
| Outside | |
| Class Glass | 2000 + / - 5mm |
| Class Class Class | 2340 + / - 5mm |

4.5.2 Hinged Entry door

Table 7 Schedule of construction of the assessed system-Hinged Entry door

| ltem | Description | | | | | |
|---------------------------|--------------------|--|---------------------|--|--|--|
| 1 | Name | Hinged door leaf | | | | |
| | Size | Up to 2700 mm high and up to 1200 mm wi | de | | | |
| | Door core | 40 mm thick; "Meranti" (ρ= min. 421 kg/m ³) / "Pine" (ρ= min. 443 kg/m ³) timber element (rails and stiles) | | | | |
| | Door facing | 0.4 mm thick "Maple" Veneer | | | | |
| 2 | Name | Glazing | | | | |
| | Material | Material Maximum pane area | | | | |
| | | 6.38 mm clear laminated glass | 1.45 m ² | | | |
| | | 6.38 mm translucent laminated glass | - | | | |
| | | 4 mm toughened glass | | | | |
| | | 5 mm Clear Float glass | 0.08 m² | | | |
| | | 5 mm Slumped Float glass | - | | | |
| | | 5 mm Coloured Frost glass | - | | | |
| | | 5 mm Frost glass | - | | | |
| | | 5 mm Rice Paper glass | - | | | |
| | | 5 mm Grey Tint glass | | | | |
| | | 5 mm Africana glass | | | | |
| | | 5 mm Satinlite Frost glass | | | | |
| | | NEX30, NEX35, NEX36, NEX38, NEX40, XU7, XU10, XU14, XU20, XU22, XU15, XV1, XV4, XV5, XV8, XV9, XV10, XV14, XV18, XV20, XCB1, XCB2, VEN 1, VEN3, XR1, XR2, XR4, XR5, XR6, XVP5, XVP6, XVP10, XVP11, XVP12, XVP13, XVP14, XVP20, XVP22, XGE4, XGE5, XG6, XGE8, XS2, XS3, XS4, XS11, XS24, XS26, XS28, XS45, XLR120, XLR130, XLR140, XLR150, XLR160, XLR170, XLR300, XLR310, XLR500, XLR600, XLR700, JST1, JST11, JST4, JST12, JST2, JST10, JST5, JST6, XL2, XL3, XL4, XL8, XL10, XIL1, XIL6, XIL21, XIL26. These are illustrated in Table 9. | | | | |
| | Installation | The glazing shall be fitted to the door and sealed with silicone sealant at the perimeter of the pane. | | | | |
| 3 | Name | Top seal | | | | |
| | Material | AQ21BR | | | | |
| | Installation | Fitted to door frame or leaf | | | | |
| 4 | Name | Side seal | | | | |
| | Material | AQ21BR | | | | |
| | Installation | Fitted to slot in the door stop on the frame | | | | |
| 5 | Name | Bottom seal | | | | |
| Material Lorient IS3022si | | | | | | |
| | Installation | Fitted to bottom of the door. | | | | |
| 6 | Name | Door frame | | | | |
| | Material | "Meranti" timber | | | | |
| | Density | Minimum 421 kg/m ³ | | | | |
| | Installation | As tested in EWFA 2705200 and 2705201 | | | | |
| 7 | Separating element | Timber stud framed plasterboard cladded wall system as tested in as tested in EWFA 2705200.1 and 2705201.1. | | | | |





Figure 2 Representative Hinged Entry door construction



4.5.3 Assessed glazing types/configurations

The assessed glazing types/configurations are illustrated in Table 9.





Table 8 Hinged Entry frame size and arrangement













| Ultimo range | КU7 | XU10 | XU14 | xu20 xu22 xu15 |
|-------------------|------|------|------|----------------|
| Vaucluse range | XV1 | | XV5 | |
| | XV4 | XV9 | NV9 | |
| | XV14 | XV18 | XV18 | |







| | XVP14 | XVP20 | XVP22 | Raised Timber Moulding: Raised Timber Moulding: Standard on external face only. Option for both sides Raised Parel Option only for XVP11, XVP1 XVP13 Rout: Standard both sides |
|--------------|-------|-------|-------|--|
| Grange range | XGE4 | XGE5 | XG6 | XGE8 |
| Savoy range | X52 | X53 | X511 | Raised Timber Moulding: Optional only for XS2, XS4 Raised Panel: Optional only for XS2, XS4 Raised Panel: Standard both sides |
| | X524 | X5.26 | X528 | X545 |









5. Assessment – Pivot Entry door and Hinged Entry door

5.1 Description of variation

Pivot Entry doors and Hinged Entry doors in conjunction with glazing were tested in EWFA 2705200.1, EWFA 2705201.1, EWFA 2705203.1 and EWFA 2705202.1. Based on the test data, a range of variations in doorset construction were proposed. The proposed variations are listed below:

- The Pivot Entry door and Hinged Entry door will be constructed as tested in EWFA 2705201.
- Framing will be interchanged between Pivot Entry door and Hinged Entry doors. Accordingly, the doorstop at the head will be removed in Pivot entry door and added for Hinged Entry door.
- The glazing types will be any of the following: VER1, VER2, VER4, VER6, VER8, VER11, XN1, XN2, XN5, XN11, XN6, XN12, XN7, XN9, XN14, XN13, XN16, XN18, HAV22, HAV44, HAV45, HAV66, HAV67, HAV88, HAV89, HAV99, HAV100, NEX10, NEX15L, NEX15R, NEX20, NEX100, NEX30, NEX35, NEX36, NEX38, NEX40, XU7, XU10, XU14, XU20, XU22, XU15, XV1, XV4, XV5, XV8, XV9, XV10, XV14, XV18, XV20, XCB1, XCB2, VEN 1, VEN3, XR1, XR2, XR4, XR5, XR6, XVP5, XVP6, XVP10, XVP11, XVP12, XVP13, XVP14, XVP20, XVP22, XGE4, XGE5, XG6, XGE8, XS2, XS3, XS4, XS11, XS24, XS26, XS28, XS45, XLR120, XLR130, XLR140, XLR150, XLR160, XLR170, XLR300, XLR310, XLR500, XLR600, XLR700, JST1, JST11, JST4, JST12, JST2, JST10, JST5, JST6, XL2, XL3, XL4, XL8, XL10, XIL1, XIL6, XIL21, XIL26.They are illustrated in Table 9.
- Fully glazed doors and sidelights will be glazed with either 6.38 mm clear laminated glass, 6.38 mm translucent laminated glass or 4 mm thick toughened glass. Additionally, small apertures will be glazed with 5 mm Clear Float glass, 5 mm Slumped Float glass, 5 mm Cathedral Float glass, 5 mm Coloured Frost glass, 5 mm Frost glass, 5 mm Rice Paper glass, 5 mm Grey Tint glass, 5 mm Africana glass or 5 mm Satinlite Frost glass.
- The pane area of aperture protected with 6.38 mm clear laminated glass, 6.38 mm translucent laminated glass or 4 mm thick toughened glass will be limited to 1.45 m². Additionally, the pane area of aperture protected with 5 mm Clear Float glass, 5 mm Slumped Float glass, 5 mm Cathedral Float glass, 5 mm Coloured Frost glass, 5 mm Frost glass, 5 mm Grey Tint glass, 5 mm Africana glass or 5 mm Satinlite Frost glass will be limited to 0.08 m².
- The facing will be hardboard, plywood or MDF.
- Pivot door will include a Lorient IS3022si bottom seal, an AQ21BR side seal and a Lorient IS3020si top seal. Additionally, Hinged door will include a Lorient IS3022si bottom seal and an AQ21BR sides and top seal.

This assessment was done to determine the expected performance of the proposed systems based on the available test data and the stipulations of AS 1530.8.1:2007.

5.2 Methodology

The method of assessment used is summarised in Table 10.

Table 10Method of assessment

| Assessment method | |
|---------------------|---|
| Level of complexity | Intermediate assessment |
| Type of assessment | Qualitative – interpolation/Comparative |

5.3 Pivot entry door

The pivot entry door was tested in EWFA 2705200.1 and EWFA 2705201.1. Based on the test data, a range of variations were proposed. They are discussed in sections 5.3.1 to 5.3.5.

5.3.1 Perimeter seal

The key performance attributes of glazing units when tested in accordance with AS 1530.8.1:2007 are their ability to remain in place without forming any gaps and not allow the excessive transmission of radiation. The specimen tested in EWFA 2705201.1 (door A) comprised a 1200 mm wide × 2340 mm high glazed pivot door system fitted to a timber framing with hardboard facing. The door incorporated four glazed apertures. When tested, there was significant fire spread from the crib up the latch edge of the door leaf and frame to the top of the door. In addition, some horizontal fire spread across the face of the door was also noted. This fire spread was associated with an increase in fire exposure to the seal at the top of the door. It was observed that the seals did not initiate any failure. Based on the above, the tested seals in EWFA 2705201 (door A) are positively assessed.

5.3.2 Door leaf size

The tested door leaf in EWFA 2705201.1 was recorded to be 2340 mm high \times 1200 mm wide. It is proposed to increase the leaf size to 2700 mm high \times 1200 mm wide. This signifies a 16% increase in leaf height. From the test data, it was observed that the deflection of the doorset was minimal. This is largely due to the construction of the leaf and level of exposure. With consideration to the test data, it is reasonable to estimate that the deflection of the door leaf will not increase to a degree that would initiate a failure if the leaf height is increased to 2700 mm. Based on the above discussion, the proposed leaf size is positively assessed.

5.3.3 Glazing design

The specimen tested in EWFA 2705200.1 (door A) comprised a 1270 mm wide \times 2461 mm high glazed pivot door system fitted to a timber framing with hardboard facing. The door included four apertures glazed with 6.38 mm clear laminated glass, each 270 mm high \times 970 mm wide. When tested, some cracks were noted, although no gaps formation was observed. In addition, the specimen tested in EWFA 2705201.1 (door B) comprised a 920 mm wide \times 2340 mm high hinged door with a single aperture glazed with 6.38 mm clear laminated glass size of 2020 mm high and 650 mm wide having a visible area of 1.31 m². When tested, the glazing cracked at around 2 minutes. However, the assembly continued to meet the failure criteria of AS 1530.8.1:2007 for the duration of the test.

It is proposed that the glazed aperture for pivot doors will be constructed as illustrated in Table 9. It is understood that the visible area protected with glass will not exceed 1.45 m². In test EWFA 2705201.1, 6.38 mm clear laminated glass has demonstrated its ability to perform under BAL 12.5 exposure. The proposal signifies a 10% increase in pane area. With consideration to the construction of the leaf, door frame and seals around the perimeter, the proposed 10% increase in glass area is not expected to be detrimental to the fire hazard performance of the door. Based on the above, 6.38 mm clear laminated glass is assessed up to an area of 1.45 m².

It is also noted that, in addition to the glazing area and proximity of the glazing to the base of the door, the glazing fixing and sealing details are similar to or less onerous than the door construction tested in EWFA 2705201.1. Hence, the proposed glazing configurations illustrated in Table 9 are expected to perform similarly or better than what was observed in EWFA 2705201.1. Based on the above, the proposed glazing configurations illustrated in Table 9 are proposed glazing configurations illustrated in Table 9.

It is proposed that laminated translucent glass is also assessed as an alternative glazing element. It has been confirmed by the manufacturer that laminated translucent glass has the same manufacturing specifications as tested clear laminated glass, with the exception of variation in colour. Variation in colour is not expected to alter the mechanical properties of the glass and, as such, the proposed laminated translucent glass is expected to perform similarly to clear laminated glass. Based on the above, laminated translucent glass is positively assessed.

It is further proposed that 4 mm clear toughened glass is also assessed as an alternative glazing. In test EWFA 2705202.1, an 885 mm wide \times 2115 mm high glazed hinged door system fitted to a timber framed wall was tested. The door included a 1700 mm high \times 530 mm wide glazing with 4 mm toughened glass. During testing, the glazing was observed to be darkened at the bottom edge, and no signs of cracks or gap formation were noted during the test duration.

It is noted that surface temperature measurements were not taken for the door leaves in EWFA 2705202.1 and the moisture content of frames was slightly higher than that required by AS 1530.8.1:2007. It is considered that, although these departures were present, the test data can still be used to assess the performance of the glazing.

The test has demonstrated the ability of 4 mm clear toughened glass to perform under BAL 12.5 exposure. It is proposed that the pane area will be increased to 1.45 m². In test EWFA 2705201.1, 6.38 mm clear laminated glass has demonstrated its ability to perform under BAL 12.5 exposure with a 1.31 m² glazing area. Based on the test data, 6.38 mm clear laminated glass is assessed for up to 1.45 m² glazing area. The manufacturing process of toughened glass varies from that of laminated glass, where toughened glass is constructed from single layers of glass bonded together with inert components. Therefore, toughened glass is less prone to breakage under heat compared with laminated glass. As 6.38 mm laminated glass is expected to perform up to 1.45 m² glazing area, similar performance can be expected from 4 mm toughened glass. Based on the above, 4 mm toughened glass is positively assessed.

It is also proposed that 5 mm Clear Float, 5 mm Slumped Float and 5 mm Cathedral Float glasses are assessed as additional glazing options up to a pane area of 0.08 m². In test EWFA 2705203.1, three hinged doors with small glazed areas were tested in accordance with AS 1530.8.1:2007. Door A incorporated four apertures glazed with 5 mm thick Clear Float glass, door B incorporated four apertures glazed with 5 mm thick Slumped Float glass and door C incorporated four apertures glazed with 5 mm thick Slumped Float glass and door C incorporated four apertures glazed with 5 mm thick Slumped Float glass and door C incorporated four apertures glazed with 5 mm thick Slumped Float glass and door C incorporated four apertures glazed with 5 mm thick Slumped Float glass and door C incorporated four apertures glazed with 5 mm thick Slumped Float glass and door C incorporated four apertures glazed with 5 mm thick Cathedral Float glass. Each individual visible pane size was 270 mm high × 270 mm wide, with a pane area of 0.07 m². During testing, cracks became evident in most panes of doorsets A, B and C. However, no gap formed in the glazing and the assembly continued to meet the failure criteria of AS 1530.8.1:2007. It was noted that, the glazing was fixed into position with silicone sealant. When the panes cracked, this sealant assisted the glass in the small aperture to remain in position in its cracked state.

It is noted that surface temperature measurements were not taken for the door leaves tested in EWFA 2705203.1, and the moisture content of frames was slightly higher than that required by AS 1530.8.1:2007. However, it is considered that although these departures were present, the test data can still be utilised to assess the performance of the glazing. In test EWFA 2705203.1, the proposed float glasses have demonstrated their ability to perform up to a pane area of 0.07 m². It is proposed that the pane area will be increased to 0.08 m² which signifies a 10% increase. With consideration to the construction of the leaf, door frame and seals around the perimeter, the proposed 10% increase in glass area is not expected to be detrimental to the fire hazard performance of the door. Based on the above, proposed 5 mm float glasses are assessed up to 0.08 m² pane area.

It is proposed that, as an alternative to Float glasses, 5 mm thick Coloured Frost glass, Frost glass, Rice Paper glass, Grey Tint glass, Africana glass and Satinlite Frost glasses are also assessed. It has been confirmed by the manufacturer that the proposed glasses are identical in manufacturing specifications to the tested Clear Float glass, Slumped Float glass and Cathedral Float glass is EWFA 2705203.1, except the proposed glazing has different patterns and laminates in different colours. The variation in patterns and laminates are not expected to alter the mechanical properties of the proposed glasses and is therefore positively assessed in this report.

5.3.4 Door leaf facing option

With reference to the tested pivot door specimen (door A) in EWFA 2705201.1, the pivot door leaf was faced with 3 mm hardboard. When tested, the hardboard facing ignited and flame spread on the



surface of the door leaf at the latch edge above the crib. The burning continued for 35-40 minutes before self-extinguishing. This occurred before all the hardboard facing was consumed. During the test, no visible changes such as flaming or burning were observed on the unexposed side of the pivot door system.

With reference to the tested hinged entry door specimen (door B) in EWFA 2705201.1, the hinged entry door leaf was solid pine with a 0.4 mm veneer. When tested, the leaf only burned locally and did not ignite the leaf facing or spread on the surface of the door. The flame self-extinguished after around 4 minutes.

During the test, it was noted that the flame propagated vertically from the crib at the bottom to the top of the frame. The flame exposure caused the glasses to crack but did not induce a failure under AS 1530.8.1:2007. It is proposed that the leaf facing will be either hardboard, plywood or MDF. The proposed facings have a similar material composition to the tested hardboard and pine but a different manufacturing process. Nonetheless, under BAL 12.5 exposure, the flame propagation with the proposed facing is expected to be as observed in EWFA 2705201.1. As no failure was observed in EWFA 2705201.1, the proposed hardboard, plywood or MDF facings are positively assessed.

5.3.5 Pivot door frame option

It is proposed that the pivot door frames tested in EWFA 2705201.1 door A will be optionally replaced with hinged entry frames tested in EWFA 2705201.1 door B, provided the doorstops are removed from the head of the door. With reference to the test observations of test EWFA 2705201.1, it can be observed that the framing for each doorset did not significantly contribute to the flaming of the doorsets, nor did it demonstrate any signs of impending gap formation or flaming. Based on the above, it is considered that the proposed construction is not expected to introduce any critical weakness with respect to radiation, insulation and gap formation and is thereby positively assessed for BAL 12.5 in accordance with AS 1530.8.1:2007.

5.4 Hinged entry door

The hinged entry door has been tested in EWFA 2705200.1 and EWFA 2705201.1. Based on the test data, a range of variations has been proposed. They are discussed in sections 5.4.1 to 5.4.5.

5.4.1 Perimeter seal

The key performance attributes of glazing units when tested in accordance with AS 1530.8.1:2007 are their ability to remain in place without the formation of 3 mm gaps and to restrict excessive transmission of radiation.

The specimen tested in EWFA 2705201.1 (door B) was comprised of a 920 mm wide \times 2340 mm high hinged door with a single aperture glazed with 6.38 mm clear laminated glass of size 2020 mm high and 650 mm wide, having a visible area of 1.31 m². When tested, no gaps formed in the glazing.

The doorset included an AQ21BR seal fitted to the door stop along both vertical edges and at the head. A Lorient IS8035si seal was fitted to the face of door the leaf at the sill. When tested, a 3 mm gap formed at the sill at 31 minutes. No other gaps formed in the tested construction.

The specimen tested in EWFA 2705201.1 (door A) also comprised a 1200 mm wide × 2340 mm high glazed pivot door system fitted to a timber framing with hardboard facing and a Lorient IS3022SI fitted at the base of the door. When tested, the assembly met the criteria of AS 1530.8.1:2007 for the duration of the test. The proposed threshold seal for hinged entry doors is Lorient IS3022SI, as tested in EWFA 2705201 door A. As the proposed seal has demonstrated its ability to perform in EWFA 2705201.1 as part of the pivot door, it is expected that the seal will perform similarly if installed in the hinged door. Based on the above, the proposed seal is positively assessed.

5.4.2 Leaf size

In test EWFA 2705201.1, the door leaf size was recorded to be 920 mm wide \times 2340 mm high. It is proposed that the leaf size will be increased to 2700 mm high \times 1200 mm wide. This signifies a 15% increase in leaf height and a 30% increase in leaf width. From the test data, it was observed that the deflection of the doorset was minimal. As discussed above, this is due to the construction of the door leaf and level of exposure. With consideration to the test data, it is reasonable to estimate that the

deflection of the door leaf will not increase to a degree that would initiate a failure if the leaf height was increased to 2700 mm and the leaf width is increased to 1200 mm. Based on the above discussion, the proposed leaf size is positively assessed.

5.4.3 Glazing design

The proposed glazing designs are identical to those discussed for pivot doors in section 5.3.3 and as illustrated in Table 9. It is considered that, as the glazing is remote from the frame and hinge arrangement, it is not expected that the difference in leaf support would affect the glazing performance. In light of the above, it is considered that the introduction of the proposed glazing design options for hinged entry doors will not introduce any weaknesses with respect to radiation, insulation and gap formation. Based on the above, the proposed glazing designs are positively assessed for hinged entry doors.

5.4.4 Door detail options

In tests EWFA 2705201.1 and EWFA 2705200.1, the door leaf (door B) was solid pine and solid Meranti, respectively. When tested, no visible changes were observed on the unexposed side of the door system, although flaming did occur on the exposed side. The flames self-extinguished at around 4 minutes and there was no significant spread on the surface of the door leaf. The proposed door leaf construction includes various planted features and rebated details. The planted features are not expected to enhance fire spread. However, they can theoretically introduce a thinner section which can make the leaf less burn resistant in that particular area. The short duration of flaming on the fire side of the door did not allow charring for a long duration. As such, the doorset was only charred within 150 mm from the bottom of the door leaf, none are located within 150 mm of the base of the door leaf. Based on the above discussion, it is considered that, the proposed construction is not expected to introduce any critical weaknesses with respect to radiation, insulation and gap formation and should therefore be positively assessed.

5.4.5 Hinged door frame option

It is proposed that the hinged entry door frames tested in EWFA 2705201.1 door B can be optionally replaced with pivot door frames tested in EWFA 2705201.1 door A, provided the doorstops are added to the head of the door. With reference to the observations of test EWFA 2705201.1, it can be observed that the framing for each doorset did not significantly contribute to the flaming of the doorsets, nor did it induce gap formation or flaming. Hence, it is expected that, if the framing is interchanged, the fire hazard performance will remain unchanged. Based on the above discussion, the proposed frame option for the hinged entry door is positively assessed.

5.5 Conclusion

This assessment demonstrates that the pivot entry door and hinge entry door are expected to achieve BAL 12.5 in accordance with AS 1530.8.1:2007 in conjunction with the proposed variations.

6. Validity

Warringtonfire Australia does not endorse the tested or assessed product in any way. The conclusions of this assessment may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all conditions.

Due to the nature of fire testing and the consequent difficulty in quantifying the uncertainty of measurement, it is not possible to provide a stated degree of accuracy. The inherent variability in test procedures, materials and methods of construction, and installation may lead to variations in performance between elements of similar construction.

This assessment is based on test data, information and experience available at the time of preparation. If contradictory evidence becomes available to the assessing authority, the assessment will be unconditionally withdrawn and the report sponsor will be notified in writing. Similarly, the assessment should be re-evaluated, if the assessed construction is subsequently tested since actual test data is deemed to take precedence.

The published procedures for the conduct of tests and the assessment of test results are subject to constant review and improvement. It is therefore recommended that this report be reviewed on, or before, the stated expiry date.

This assessment represents our opinion about the performance of the proposed systems expected to be demonstrated on a test in accordance with AS 1530.8.1:2007, based on the evidence referred to in this report.

This assessment is provided to Hume Doors & Timbers (Aust) Pty Ltd, Hume Doors & Timber (VIC) Pty Ltd, Hume Doors & Timber (QLD) Pty Ltd, Hume Doors & Timber (SA) Pty Ltd, Hume Doors & Timber (WA) Pty Ltd for their own specific purposes. This report may be used as evidence of suitability in accordance with the requirements of the relevant National Construction Code. Building certifiers and other third parties must determine the suitability of the systems described in this report for a specific installation.

Appendix A Summary of supporting test data

A.1 Test report – EWFA 2705200.1

Table 11 Information about test report

| Item | Information about test report | |
|--|---|--|
| Report sponsor | Hume Doors & Timber (Aust) Pty Ltd, Hume Doors & Timber (VIC) Pty Ltd, Hume Doors & Timber (QLD) Pty Ltd, Hume Doors & Timber (SA) Pty Ltd, and Hume Doors & Timber (WA) Pty Ltd. | |
| Test laboratory | Warringtonfire, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia. | |
| Test date | The fire resistance test was done on 23 March 2012. | |
| Test standards | The test was done in accordance with AS 1530.8.1:2007. | |
| Variation to test standards | None | |
| General description of tested specimen | The test specimen comprised two single doorsets, one with pivot and one with hinged design and a sidelight, incorporating 6.38 mm thick clear laminated glass that was set into timber framing. The pivot door (door A) was nominally 2461 mm high \times 1270 mm wide and hinged door with side light (door B) was nominally 2417 mm high \times 1415 mm wide, installed within an insulated timber stud framed wall system. Glazing in door A was recorded to be 270 mm wide. The glazing for the sidelight was recorded to be 2357 mm high \times 400 mm wide. | |
| Instrumentation | The test report states that the instrumentation was in accordance with AS 1530.8.1:2007. | |

The test specimen achieved the following results – see Table 12 and Table 13.

Table 12 Results summary for this test report-doorset A

| Performance criteria | | Time to Failure (min) | Position of Failure |
|--|---------------------------|---------------------------------------|---------------------------|
| Formation of through-gaps gi | reater than 3 mm | Failure at 21 minutes | At head of the pivot door |
| Sustained flaming for 10 s on | the non-fire side | No failure | - |
| Flaming on the fire-exposed minute test period. | side at the end of the 60 | No failure | - |
| Radiant heat flux 365mm exceeding 15 kW m-2 | from the non-fire side | No failure | - |
| Mean and maximum temperature rises greater than 140K and 180K | | Not applicable for glazed elements | |
| Radiant heat flux 250 mm from the specimen, greater than 3 kW m-2 between 20 min and 60 min | | No failure | - |
| Mean and maximum temperature of internal faces exceeding 250°C and 300°C respectively between 20 min and 60 min after commencement of test | | Not applicable for glazed elements | r - |
| Crib class | А | Peak heat flux | 12.5 kW m-2 |
| Test Result | | BAL: FAIL | |



Table 13 Results summary for this test report-doorset B

| Performance Criteria | | Time to Failure (min) | | Position of Failure |
|--|-------------------------------|--------------------------------|-----|---|
| Formation of through-gaps greater than 3 mm | | Failure at 45 | | At the bottom on the east side of hinged door leaf, |
| Sustained flaming for 10 s on the | e non-fire side | No failure | | - |
| Flaming on the fire-exposed side test period. | e at the end of the 60 minute | No failure | | - |
| Radiant heat flux 365mm from the non-fire side exceeding 15 kW m-2 | | No failure | | - |
| Mean and maximum temperature rises greater than 140K and 180K | | Not applicable glazed elements | for | - |
| Radiant heat flux 250 mm from the specimen, greater than 3 kW m-2 between 20 min and 60 min | | No failure | | - |
| Mean and maximum temperature of internal faces exceeding 250°C and 300°C respectively between 20 min and 60 min after commencement of test | | Not applicable glazed elements | for | - |
| Crib class | А | Peak heat flux | | 12.5 kW m ⁻² |
| Test Result | | BAL: FAIL | | |

A.2 Test report – EWFA 2705201.1

Table 14 Information about test report

| Item | Information about test report |
|--|---|
| Report sponsor | Hume Doors & Timber (Aust) Pty Ltd, Hume Doors & Timber (VIC) Pty Ltd, Hume Doors & Timber (QLD) Pty Ltd, Hume Doors & Timber (SA) Pty Ltd, and Hume Doors & Timber (WA) Pty Ltd. |
| Test laboratory | Warringtonfire, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia. |
| Test date | The fire resistance test was done on 18 May 2012. |
| Test standards | The test was done in accordance with AS 1530.8.1:2007. |
| Variation to test standards | Doors were exposed to 2.9 kW/m ² radiation for the duration 540- 600 seconds, which is under 3.0 kW/m ² required by the standard. It has been confirmed by the laboratory that, such minor variation is not expected to impact overall performance. |
| General description of tested specimen | The test specimen comprised two single doorsets, one with pivot and one with hinged design and a sidelight, incorporating 6.38 mm thick clear laminated glass that was set into timber framing. The pivot door (door A) was nominally 2461 mm high \times 1270 mm wide and hinged door with side light (door B) was nominally 2417 mm high \times 1415 mm wide, installed within an insulated timber stud framed wall system. The glazing in door A was recorded to be 125 mm high \times 970 mm wide and in door B was recorded to be 2020 mm high \times 650 mm wide. The sidelight was recorded to be 2357 mm high \times 400 mm wide. |
| Instrumentation | The test report states that the instrumentation was in accordance with AS 1530.8.1:2007. |

The test specimen achieved the following results - see Table 15 and Table 16.



Table 15 Results summary for this test report-doorset A

| Performance Criteria | Time to Failure (min) | Position of Failure |
|---|--|------------------------|
| Formation of through-gaps greater than 3 mm | No failure | - |
| Sustained flaming for 10 s on the non-fire side | No failure | - |
| Flaming on the fire-exposed side at the end of the 60 minute tes period. | t No failure | - |
| Radiant heat flux 365mm from the non-fire side exceeding 15 kW m 2 | - No failure | - |
| Mean and maximum temperature rises greater than 140K and 180k | Not applicable for glazed elements | - |
| Radiant heat flux 250 mm from the specimen, greater than 3 kW m 2 between 20 min and 60 min | No failure | - |
| Mean and maximum temperature of internal faces exceeding 250°C and 300°C respectively between 20 min and 60 min afte commencement of test | Not applicable for glazed elements | - |
| Crib class A | Peak heat flux | 12.5 kW m-2 |
| Test Result | BAL: A-12.5 | |

Table 16 Results summary for this test report-doorset B

| Performance Criteria | | Time to Failure (min) | Position of Failure |
|--|---------------------------------------|------------------------------------|---|
| Formation of through-gaps greater than 3 mm | | 20 minutes | At seal location at bottom of door leaf |
| Sustained flaming for 10 s on | the non-fire side | No failure | - |
| Flaming on the fire-exposed period. | side at the end of the 60 minute test | No failure | - |
| Radiant heat flux 365mm from the non-fire side exceeding 15 kW m-2 | | No failure | - |
| Mean and maximum temperature rises greater than 140K and 180K | | Not applicable for glazed elements | - |
| Radiant heat flux 250 mm from the specimen, greater than 3 kW m-2 between 20 min and 60 min | | No failure | - |
| Mean and maximum temperature of internal faces exceeding 250°C and 300°C respectively between 20 min and 60 min after commencement of test | | Not applicable for glazed elements | - |
| Crib class | Α | Peak heat flux | 12.5 kW m-2 |
| Test Result | | BAL: FAIL | |

A.3 Test report – EWFA 2705202.1

Table 17 Information about test report

| Item | Information about test report |
|-----------------------------|---|
| Report sponsor | Hume Doors & Timber (Aust) Pty Ltd, Hume Doors & Timber (VIC) Pty Ltd, Hume Doors & Timber (QLD) Pty Ltd, Hume Doors & Timber (SA) Pty Ltd, and Hume Doors & Timber (WA) Pty Ltd. |
| Test laboratory | Warringtonfire, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia. |
| Test date | The fire resistance test was done on 11 July 2012. |
| Test standards | The test was done in accordance with AS 1530.8.1:2007. |
| Variation to test standards | Surface temperature measurements were not taken for the door leaves hence the results of this test were considered with caution. |
| | The entire specimen was conditioned prior to the test such that the average moisture content of door A frame was below 12.3% and door B frame was below 12.7%. |



| ltem | Information about test report |
|--|--|
| General description of tested specimen | The test specimen comprised two single hinged doorsets incorporating 4 mm thick toughened glass set into timber framing. The east side door (door A) was nominally 885 mm wide \times 2115 mm high and the west side door (door B) was nominally 885 mm wide \times 2115 mm high. The doors were installed within a timber stud framed wall. The glazing in door A was recorded to be 1700 mm high \times 530 mm wide and in door B was recorded to be 270 mm high \times 560 mm wide. |
| Instrumentation | The test report states that the instrumentation was in accordance with AS 1530.8.1:2007. |

The test specimen achieved the following results – see Table 18 and Table 19.

Table 18 Results summary for this test report-doorset A

| Performance Criteria | | Time to Failure (min) | Position of Failure |
|--|---------------------------------------|------------------------------------|------------------------|
| Formation of through-gaps | greater than 3 mm | No failure | - |
| Sustained flaming for 10 s o | n the non-fire side | No failure | - |
| Flaming on the fire-exposed period. | side at the end of the 60 minute test | No failure | - |
| Radiant heat flux 365mm from the non-fire side exceeding 15 kW m-2 | | No failure | - |
| Mean and maximum temperature rises greater than 140K and 180K | | Not applicable for glazed elements | - |
| Radiant heat flux 250 mm fr m-2 between 20 min and 60 | om the specimen, greater than 3 kW | No failure | - |
| Mean and maximum temperature of internal faces exceeding 250°C and 300°C respectively between 20 min and 60 min after commencement of test | | Not applicable for glazed elements | - |
| Crib class | А | Peak heat flux | 12.5 kW m-2 |
| Test Result | | BAL: A-12.5 | |

Table 19 Results summary for this test report-doorset B

| Performance Criteria | | Time to Failure (min) | Position of Failure |
|--|---|------------------------------------|------------------------|
| Formation of through-gaps | greater than 3 mm | No failure | - |
| Sustained flaming for 10 s c | on the non-fire side | No failure | - |
| Flaming on the fire-exposed period. | side at the end of the 60 minute test | No failure | - |
| Radiant heat flux 365mm from the non-fire side exceeding 15 kW m-2 | | No failure | - |
| Mean and maximum temperature rises greater than 140K and 180K | | Not applicable for glazed elements | - |
| Radiant heat flux 250 mm fr m-2 between 20 min and 60 | om the specimen, greater than 3 kW) min | No failure | - |
| Mean and maximum temperature of internal faces exceeding 250°C and 300°C respectively between 20 min and 60 min after commencement of test | | Not applicable for glazed elements | - |
| Crib class | А | Peak heat flux | 12.5 kW m-2 |
| Test Result | | BAL: A-12.5 | |

A.4 Test report – EWFA 2705203.1

Table 20Information about test report

| Item | Information about test report | |
|--|---|--|
| Report sponsor | Hume Doors & Timber (Aust) Pty Ltd, Hume Doors & Timber (VIC) Pty Ltd, Hume Doors & Timber (QLD) Pty Ltd, Hume Doors & Timber (SA) Pty Ltd, and Hume Doors & Timber (WA) Pty Ltd. | |
| Test laboratory | Warringtonfire, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia. | |
| Test date | The fire resistance test was done on 10 July 2012. | |
| Test standards | The test was done in accordance with AS 1530.8.1:2007. | |
| Variation to test standards | Surface temperature measurements were not taken for the door leaves hence the results of this test were considered with caution. The entire specimen was conditioned prior to the test such that the average | |
| | moisture content of frame was below 12.9%. Door A was 9.7%, door B was 10.7% and door C was 10.3%. | |
| General description of tested specimen | The test specimen comprised three single hinged doorsets incorporating different types of glasses and set into timber framing. All doors were equal size of 400 mm wide \times 2040 mm high. The door system was installed within a timber stud framed wall system. Each glazing was recorded to be 270 mm high \times 270 mm wide. | |
| Instrumentation | The test report states that the instrumentation was in accordance with AS 1530.8.1:2007. | |

The test specimen achieved the following results - see Table 21 to Table 23.

Table 21 Results summary for this test report-doorset A

| Performance Criteria | | Time to Failure (min) | Position of Failure |
|--|---|--------------------------|------------------------|
| Formation of through-gaps greater than 3 mm | | No failure | - |
| Sustained flaming for 10 s on the non-fire side | | No failure | - |
| Flaming on the fire-exposed side at the end of the 60 minute test period. | | No failure | - |
| Radiant heat flux 365mm from the non-fire side exceeding 15 kW m-2 | | No failure | - |
| Mean and maximum temperature rises greater than 140K and 180K | | No failure | - |
| Radiant heat flux 250 mm from the specimen, greater than 3 kW m- 2 between 20 min and 60 min | | No failure | - |
| Mean and maximum temperature of internal faces exceeding 250°C and 300°C respectively between 20 min and 60 min after commencement of test | | No failure | - |
| Crib class | А | Peak heat flux | 12.5 kW m-2 |
| Test Result | | BAL: A-12.5 | |



Table 22 Results summary for this test report-doorset B

| Performance Criteria | | Time to Failure (min) | Position of Failure |
|--|---|--------------------------|------------------------|
| Formation of through-gaps greater than 3 mm | | No failure | - |
| Sustained flaming for 10 s on the non-fire side | | No failure | - |
| Flaming on the fire-exposed side at the end of the 60 minute test period. | | No failure | - |
| Radiant heat flux 365mm from the non-fire side exceeding 15 kW m-2 | | No failure | - |
| Mean and maximum temperature rises greater than 140K and 180K | | No failure | - |
| Radiant heat flux 250 mm from the specimen, greater than 3 kW m-2 between 20 min and 60 min | | No failure | - |
| Mean and maximum temperature of internal faces exceeding 250°C and 300°C respectively between 20 min and 60 min after commencement of test | | No failure | - |
| Crib class | А | Peak heat flux | 12.5 kW m-2 |
| Test Result | | BAL: FAIL | |

Table 23 Results summary for this test report-doorset C

| Performance Criteria | | Time to Failure (min) | Position of Failure |
|--|---|--------------------------|------------------------|
| Formation of through-gaps greater than 3 mm | | No failure | - |
| Sustained flaming for 10 s on the non-fire side | | No failure | - |
| Flaming on the fire-exposed side at the end of the 60 minute test period. | | No failure | - |
| Radiant heat flux 365mm from the non-fire side exceeding 15 kW m-2 | | No failure | - |
| Mean and maximum temperature rises greater than 140K and 180K | | No failure | - |
| Radiant heat flux 250 mm from the specimen, greater than 3 kW m-2 between 20 min and 60 min | | No failure | - |
| Mean and maximum temperature of internal faces exceeding 250°C and 300°C respectively between 20 min and 60 min after commencement of test | | No failure | - |
| Crib class | А | Peak heat flux | 12.5 kW m-2 |
| Test Result | | BAL: A-12.5 | |

Global locations



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