

assessment report

Title:

The Fire Resistance
Performance of Modified
Doorsets

**WF Assessment Report
No:**

187254

Prepared for:

Phoenix Door Panels Ltd.
Westnewlands Ind. Estate
Somersham
Huntingdon
Cams
PE28 3EB

Date:

1st October 2009

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary.....	3
Introduction	4
Assumptions	4
Proposals	4
Basic Test Evidence	5
Assessed Performance	6
Conclusions	8
Validity	8
Summary of Primary Supporting Data	9
Declaration by Phoenix Door Panels Limited	12
Signatories	13

Executive Summary

Objective	This report provides a considered opinion regarding the fire resistance performance of doorsets, as supplied by Phoenix Door Panels Limited, similar to those tested under the references WF Nos. 167957/A and 168809, when including various modifications, specifically in relation to the glazing specification.
Report Sponsor	Phoenix Door Panels Limited
Address	Westnewlands Ind. Estate Somersham Huntingdon Cambs PE28 3EB
Summary of Conclusions	Glazed and unglazed doorsets as supplied by Phoenix Door Panels Limited and as described in this report, would be expected to provide 30 minutes integrity performance, if subjected to a test in accordance with BS 476: Part 22: 1987.
Valid until	1 st October 2014

This report may only be reproduced in full. Extracts or abridgements of reports shall not be published without permission of Bodycote warringtonfire.

Introduction

This report provides a considered opinion regarding the fire resistance performance of doorsets similar to those tested under the references WF Nos. 167957/A and 168809, when including various modifications, specifically in relation to the glazing specification.

The proposed doorsets as supplied by Phoenix Door Panels Limited, incorporating alternative glazing details, are required to provide a fire resistance performance of 30 minutes integrity, with respect to BS 476: Part 22: 1987.

FTSG

The data referred to in the supporting data section has been considered for the purpose of this appraisal which has been prepared in accordance with the Fire Test Study Group Resolution No. 82: 2001.

Assumptions

Supporting wall

It is assumed that the construction of the wall, which supports the proposed doorsets, will have been the subject of a separate test and the performance of the wall is such that it will not influence the performance of the doorset for the required period.

Clearance gaps

Door leaf to frame clearance gaps can have a significant effect on the overall fire performance of a doorset. It is therefore assumed that the leaf to leaf and leaf to frame clearance gaps will not exceed those detailed for the tested doorsets in the reports referenced WF No's. 167957/A and 168809. In addition it is assumed that the door leaves will be in the closed position and will be latched (the inactive leaf of the double-leaf door option will incorporate engaged flush bolts).

Doorsets

It is assumed that the doorsets will be identical to the doorsets tested under the reference WF No's. 167957/A and 168809, unless specified otherwise in this report.

Installation

It is assumed that the proposed doorsets will be installed by competent installers, in a similar manner to the tested doorsets.

Proposals

Several tests have been conducted on composite doorset constructions which comprise Nan Ya door leaves fitted within Winkhaus Ecoframe 44 door frames (with frame extension) and incorporating Winkhaus AV2 Auto mechanical locking system. The doorsets were tested under the references WF No's. 167957/A and 168809.

It is proposed that the glazing systems as incorporated into the doors tested under the reference WF No. 168809 may be replaced with the Nan Ya glazing cassette system as tested under the reference Chilt/RF08171. The glazing will comprise double glazed units. The fire resisting glass component in this system may comprise either 7 mm thick Pyrobelite (as tested) or alternatively 6 mm Pyroshield glass. In each case the double-glazed unit will be orientated such that the Pyrobelite or Pyroshield is on the unexposed (non-fire risk side) of the doorset assembly.

Basic Test Evidence

WF No. 168809

A test conducted to determine the fire resistance performance of a fully insulated single-acting, single-leaf doorset, when tested in accordance with BS 476: Part 22: 1987, Clause 6.

For the purpose of the test the doorsets were referenced Doorset A and Doorset B. The doorsets were of overall dimensions 2077 mm high by 985 mm wide. Both doorsets included a half glazed door leaf of 2013 mm high by 914 mm wide by 44 mm thick comprising a fibreglass skin with two panel details, composite rails, and a Phenolic Aldehyde foam core. The glazing system fitted to Doorset A consisted of a wired double glazed unit with 6.8 mm laminated glass with PVB interlayer on the exposed face and 6 mm Pyroshield S Clear on the unexposed face, the glazing system fitted to Doorset B consisted of a clear double glazed unit with 7 mm Pyrobelite EW30 on the exposed face and 6.8 mm laminated glass with PVB interlayer on the unexposed face. Each door leaf was hung within a Winkhaus Ecoframe on four stainless steel hinges and were fitted so that they opened towards the heating conditions of the test. The doorsets were each fitted with a Winkhaus AV2 Auto mechanical locking system which was latched for the duration of the test.

Doorset A achieved an integrity performance of 45 minutes and Doorset B achieved an integrity performance of 38 minutes.

Chilt/RF08171

A test conducted to determine the fire resistance performance of a fully insulated single-acting, single-leaf doorset, when tested in accordance with BS 476: Part 22: 1987, Clause 8.

For the purpose of the test the doorsets were referenced Doorset A and Doorset B. Doorset A had leaf dimensions of 1915 mm high by 838 mm wide by 44 mm thick. Doorset B had leaf dimensions of 2012 mm high by 914 mm wide by 44 mm thick. Both doors were glazed using Nan Ya ABS glazing cassette systems.

Doorset A achieved an integrity performance of 50 minutes and Doorset B achieved an integrity performance of 47 minutes.

Assessed Performance

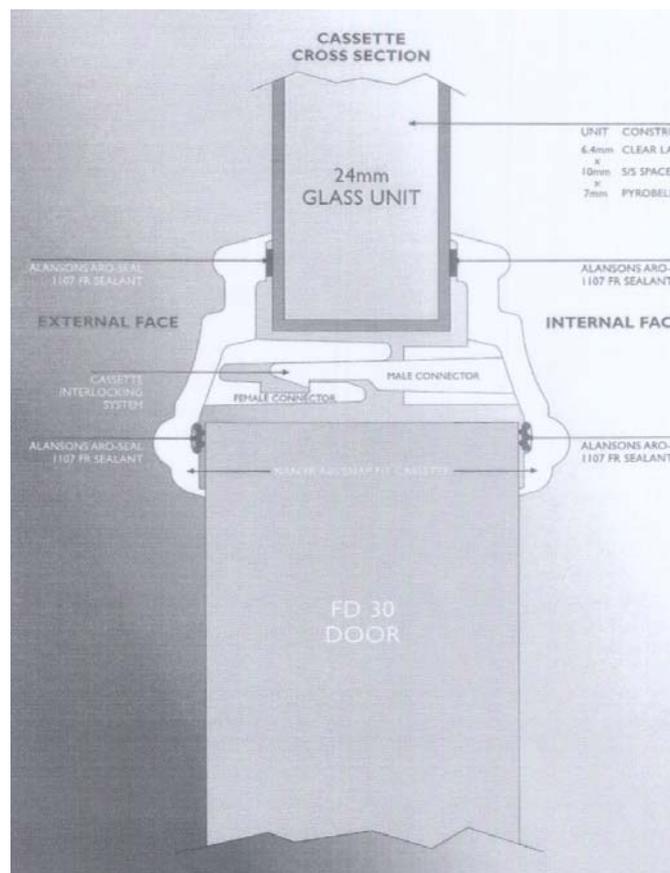
General Doorset Performance

The glazed and unglazed doorsets, as supplied by Phoenix Door Panels Limited, are of the same design as tested under the references WF No's. 167957/A and 168809 (apart from the glazing cassette design which will be discussed later in this report). The door designs, including the Ecoframe 44 component (with frame extension option) and the Winkhaus AV2 Auto-mechanical lock, in glazed and unglazed configurations have both proven, by test, their ability to achieve significantly in excess of the required 30 minute fire resistance performance. The performance of the basic door leaf design with the various frame and ironmongery options is therefore not in doubt. The only area which is proposed to be modified relates to the design of the glazing cassette system which is incorporated into the glazed doorset option. This design modification therefore needs to be technically justified.

Alternative Glazing Cassette

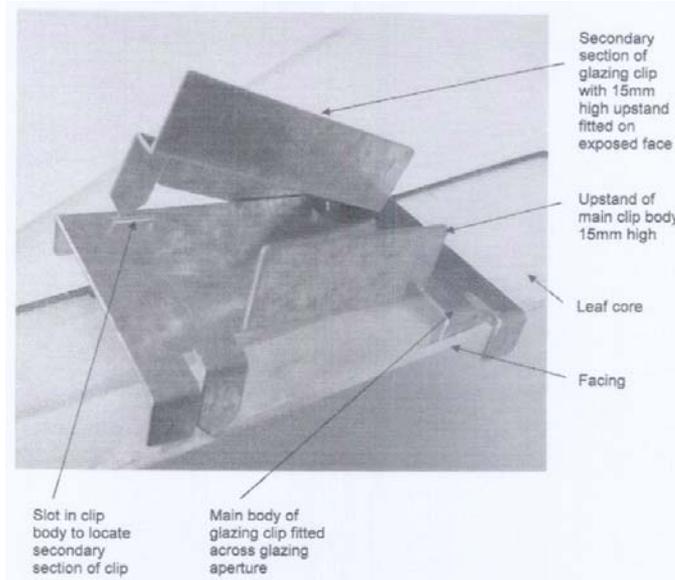
It is proposed that the doorsets, as tested under the reference WF Report No. 168809, may be fitted with the Nan Ya glazing cassette system as tested under the referenced Chilt/RF08171 and as detailed in Fig. 1 below.

Fig. 1 Glazing Cassette



The glazing system comprises a Nan Ya ABS snap fit cassette system with interlocking beads. Four Nan Ya two part profiled galvanised steel glazing clips (0.9 mm thick) are utilised as the glass retention system (see Fig. 2 below):

Fig. 2 Glazing Clip



The proposed glazing system has been tested in doors identical to those supplied by Phoenix Door Panels Limited (test referenced Chilt/RF08171) and has shown to perform for periods of significantly in excess of 30 minutes when installed within such doors (47 and 50 minutes). The performance of the glazing systems (as tested with 7 mm Pyrobelite as the fire resisting glass element) installed within the doorset design considered in the report is therefore not in doubt and is positively assessed.

Alternative Glass

The glazing cassette systems installed within the doors tested under the reference Chilt/RF08171 incorporated Pyrobelite 7 mm as the fire resistance glass element in the double glazed unit. It is proposed that the Pyrobelite may be replaced with 6 mm Pyroshield glass whilst still maintaining the required fire resistance performance of the doorset.

Although the Nan Ya glazing cassette has not been tested with the proposed Pyroshield glass option (which unlike the tested Pyrobelite is an uninsulating glass), this glass option was included within the double glazed units of the glazing cassette system tested under the reference WF Test Report No. 168809. The uninsulated glazed vision panel did not exhibit any loss of impermeability (integrity) throughout the test duration of 45 minutes.

Although the design of the glazing cassettes are different, the materials from which the plastics components of the two tested designs of glazing cassette are fabricated are similar (ABS) and so the potential for ignition of the glass framing components of the proposed Nan Ya cassette is not considered to be any greater than the system tested in WF 168809 with the Pyroshield glass option.

The performances achieved by the Nan Ya cassette system and the cassette system tested in WF 168809, which incorporated the uninsulating Pyroshield based double glazed unit, both achieved significantly in excess of the required 30 minutes (both doorsets/systems achieved in excess of 45 minutes fire resistance). This large degree of overrun provides further confidence in the proposal.

The use of the Nan Ya glazing cassette system (as tested in Chilt/RF08171) is therefore positively appraised for use in the doorsets tested under the reference WF 168809 when incorporating either 7 mm Pyrobelite or Pyroshield as the fire resisting glass component in a double glazed unit.

Conclusions

Glazed and unglazed doorsets as supplied by Phoenix Door Panels Limited and as described in this report, would be expected to provide 30 minutes integrity performance, if subjected to a test in accordance with BS 476: Part 22: 1987.

Validity

This assessment is issued on the basis of test data and information available at the time of issue. If contradictory evidence becomes available to Bodycote **warringtonfire** the assessment will be unconditionally withdrawn and **Phoenix Door Panels Limited** will be notified in writing. Similarly the assessment is invalidated if the assessed construction is subsequently tested because actual test data is deemed to take precedence over an expressed opinion. The assessment is valid initially for a period of five years i.e. until 1st October 2014, after which time it is recommended that it be returned for re-appraisal.

The appraisal is only valid provided that no other modifications are made to the tested construction other than those described in this report.

Summary of Primary Supporting Data

WF No. 168809

A test conducted to determine the fire resistance performance of a fully insulated single-acting, single-leaf doorset, when tested in accordance with BS 476: Part 22: 1987, Clause 6.

For the purpose of the test the doorsets were referenced Doorset A and Doorset B.

The doorsets were of overall dimensions 2077 mm high by 985 mm wide. Both doorsets included a half glazed door leaf of 2013 mm high by 914 mm wide by 44 mm thick comprising a fibreglass skin with two panel details, composite rails, and a Phenolic Aldehyde foam core. The glazing system fitted to Doorset A consisted of a wired double glazed unit with 6.8 mm laminated glass with PVB interlayer on the exposed face and 6 mm Pyroshield S Clear on the unexposed face, the glazing system fitted to Doorset B consisted of a clear double glazed unit with 7 mm Pyrobelite EW30 on the exposed face and 6.8 mm laminated glass with PVB interlayer on the unexposed face. Each door leaf was hung within a Winkhaus Ecoframe on four stainless steel hinges and were fitted so that they opened towards the heating conditions of the test. The doorsets were each fitted with a Winkhaus AV2 Auto mechanical locking system which was latched for the duration of the test.

The results of the test were as follows:

	Integrity
Doorset A	45 minutes
Doorset B	38 minutes

The test was discontinued after a period of 45 minutes.

Test Date : 26th November 2007

Sponsor : The sponsor of this test has provided written permission to allow the use of this data in the formulation of this assessment report

WF No. 167957/A

A test conducted to determine the fire resistance performance of a fully insulated single-acting, single-leaf doorset, when tested in accordance with BS 476: Part 22: 1987, Clause 6.

For the purposes of the test the solid panel doorset was referenced 'Doorset A'. Another half glazed specimen referenced 'Doorset B' was tested simultaneously and is the subject of a separate letter report referenced WF Test Report No. 167957/B.

Doorset A was of overall dimensions 2077 mm high by 985 mm wide including an outer frame extension profile screw fixed to both vertical edges of the frame and the upper horizontal edge of the frame. The doorset included a door leaf of 2013 mm high by 914 mm wide by 44 mm thick comprising fibreglass skin with six panel details, composite rails, and a Phenolic Aldehyde foam core. The door leaf incorporated a letter box fitted centrally on the midrail and an Eye viewer fitted at mid-span just below three quarter height The leaf was hung within a Winkhaus Ecoframe on four stainless steel hinges and was fitted so that it opened towards the heating conditions of the test. The doorset was fitted with a Winkhaus AV2 Auto mechanical locking system which was latched for the duration of the test.

The results of the test were as follows:

	Integrity	Insulation
Doorset A	39 minutes	24 minutes

The test was discontinued after a period of 42 minutes.

Test Date : 6th November 2007

Sponsor : The sponsor of this test has provided written permission to allow the use of this data in the formulation of this assessment report

Chilt/RF08171

A test conducted to determine the fire resistance performance of a fully insulated single-acting, single-leaf doorset, when tested in accordance with BS 476: Part 22: 1987, Clause 8.

For the purpose of the test the doorsets were referenced Doorset A and Doorset B.

Doorset A had leaf dimensions of 1915 mm high by 838 mm wide by 44 mm thick. Doorset B had leaf dimensions of 2012 mm high by 914 mm wide by 44 mm thick. Both doors were glazed using Nan Ya ABS glazing cassette systems.

The results of the test were as follows:

	Integrity
Doorset A	50 minutes
Doorset B	47 minutes

Test Date : 18th December 2008

Sponsor : The sponsor of this test has provided written permission to allow the use of this data in the formulation of this assessment report

Declaration by Phoenix Door Panels Limited

We the undersigned confirm that we have read and complied with the obligations placed on us by the UK Fire Test Study Group Resolution No. 82: 2001.

We confirm that the component or element of structure, which is the subject of this assessment, has not to our knowledge been subjected to a fire test to the Standard against which the assessment is being made.

We agree to withdraw this assessment from circulation should the component or element of structure be the subject of a fire test to the Standard against which this assessment is being made.

We are not aware of any information that could adversely affect the conclusions of this assessment.

If we subsequently become aware of any such information we agree to cease using the assessment and ask Bodycote **warringtonfire** to withdraw the assessment.

Signed:

For and on behalf of:

Signatories


Responsible Officer A. Kearns* - Technical Manager


Approved D. Hankinson* - Senior Certification Engineer

* For and on behalf of Bodycote **warringtonfire**.

Report Issued: 1 st October 2009

The assessment report is not valid unless it incorporates the declaration duly signed by the applicant.

This copy has been produced from a .pdf format electronic file that has been provided by Bodycote **warringtonfire** to the sponsor of the report and must only be reproduced in full. Extracts or abridgements of reports must not be published without permission of Bodycote **warringtonfire**. The original signed paper version of this report is the sole authentic version. Only original paper versions of this report bear authentic signatures of the responsible Bodycote **warringtonfire** staff.



Bodycote warringtonfire • Head Office • Holmesfield Road • Warrington • Cheshire • WA1 2DS • United Kingdom
Tel: +44 (0) 1925 655 116 • Fax: +44 (0) 1925 655 419 • Email: Info@warringtonfire.net • Website: www.warringtonfire.net

