assessment report

Bodycote

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Title:

The Fire Resistance Performance of Modified Timber Based Doorsets

WF Assessment Report No:

176287

Prepared for:

Sauerlander Spanplatten GmbH

Postfach 5553
59805 Arnsberg
Germany

Date:

15th September 2008

warringtonfire
global safety
TESTING

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Executive Summary

Objective	This report provides a considered opinion regarding the fire resistance performance of timber based doorsets similar to those tested under the reference WF No. 175295, when including various modifications.
Report Sponsor	**Sauerlander Spanplatten GmbH**
Address	Postfach 5553 59805 Arnsberg Germany
Summary of Conclusions	Should the recommendations given in this report be followed, it can be concluded that timber doorsets as described in this report, would be expected to provide 60 minutes integrity performance, if subjected to a test in accordance with BS 476: Part 22: 1987.
Valid until	1st September 2013

Introduction

This report provides a considered opinion regarding the fire resistance performance of timber based doorsets similar to those tested under the reference WF No. 175295, when including various modifications.

The proposed doorsets similar to those tested under the references WF No. 175295 are required to provide a fire resistance performance of 60 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 report referenced WF No. 175295. In addition it is assumed that the door leaves will be in the closed position and will be latched.

Doorsets

It is assumed that the doorsets will be identical to the doorsets tested under the reference WF No. 175295, 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

It is proposed that timber based single-acting, single-leaf doorsets, similar to the specimen referenced Doorset A, tested under the reference WF No. 175295, will provide 60 minutes integrity performance with respect to BS 476: Part 22: 1987, when including 13 mm door stops.

It is proposed that timber based single-acting, single-leaf doorsets, similar to the specimen referenced Doorset B, tested under the reference WF No. 175295, will provide 60 minutes integrity performance with respect to BS 476: Part 22: 1987, when including 1 mm Interdens wrapping around the lock/latch and 13 mm door stops.

Basic Test Evidence

WF No. 175295

The report referenced WF No. 175295 and briefly described in the supporting data section of this report, relates to a test conducted in accordance with BS 476: Part 22: 1987 on two specimens of single-acting, timber doorset.

The test demonstrated the ability of Doorset A to provide 71 minutes integrity performance and Doorset B to provide 59 minutes integrity performance.

Assessed Performance

Single-leaf doorsets

The specimen referenced Doorset A tested under the reference WF No. 175295 incorporated a leaf constructed with an extruded solid board core and 5.8 mm thick hardboard facings (overall thickness 55 mm). The leaf was hung within a hardwood frame on three steel hinges.

The test demonstrated the ability of this doorset with 25 mm wide door stops to provide 71 minutes integrity performance.

It is proposed that the door stop width may be reduced from the tested 25 mm to 13 mm. Empirical evidence and test experience for timber based doorsets, has shown that the significance of the size of the door stop becomes negligible as soon as distortion of the leaf causes separation from the stop, which occurs relatively early in a standard test.

The proposed reduction in stop size from the unusually large 25 mm to the more standard 13 mm width is therefore considered to be of little significance to the performance of the doorset and an integrity performance of at least 60 minutes would therefore still be anticipated.

Double-leaf doorsets

The specimen referenced Doorset B tested under the reference WF No. 175295 incorporated a leaf constructed with an extruded solid board core and 5.8 mm thick hardboard facings (overall thickness 55 mm). The leaf was hung within a hardwood frame on three steel hinges.

The test demonstrated the ability of this doorset with 25 mm wide door stops to provide 59 minutes integrity performance, after which time a cotton pad was applied and ignited at the meeting edges of the leaves, coincident with the latch position.

The latch position can be relatively onerous since a mortised cut-out of leaf material is required and interruption of the leaf edge intumescent seals occurs. In this case no specific intumescent protection was applied to the latch and an integrity performance of 59 minutes was still achieved.

It is therefore considered that if the latch was fully wrapped with at least 1 mm thick Interdens intumescent sheet and further pads of the intumescent sheet incorporated behind the strike and forend plates, then this would be expected to impede the burn through in this area for at least the required extra 60 seconds and an integrity performance of 60 minutes would therefore be anticipated.

It is further proposed that the door stop width may be reduced from the tested 25 mm to 13 mm. The significance of this modification has already been discussed for the single-leaf 'Doorset A' above and is considered to be equally relevant to the double-leaf 'Doorset B'.

Conclusions

Timber doorsets as described in this report, would be expected to provide 60 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 **Sauerlander Spanplatten GmbH** 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 September 2013, 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. 175295

A test conducted in accordance with BS 476: Part 22: 1987 on two specimens of single-acting, timber doorset.

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

Doorset A had overall dimensions of 2085 mm high by 1015 mm wide and incorporated a door leaf with overall dimensions 2040 mm high by 928 mm wide by 55 mm thick. The door leaf was of an extruded solid board cored construction with 5.8 mm thick HDF: 'Homadur' facings. The leaf was hung within a hardwood frame on three mild steel Butt hinges.

The doorset incorporated an aperture glazed with 6 mm thick Georgian wired polished plate glass referenced 'Pyroshield' and was retained via screw fixed hardwood (species: Sipo) beading. The door leaf was orientated such that it opened towards the heating conditions of the test.

Doorset B had overall dimensions of 2445 mm high by 1390 mm wide and incorporated two unequal width door leaves. The primary leaf had overall dimensions of 2040 mm high by 900 mm wide by 55 mm thick. The secondary leaf had overall dimensions of 2040 mm high by 415 by 55 mm thick.

The doorset incorporated an aperture glazed with 6 mm thick Georgian wired polished plate glass referenced 'Pyroshield' and was retained via screw fixed hardwood (species: Sipo) beading. Both door leaves were orientated such that they opened towards the heating conditions of the test.

Both doorsets were fitted with a single mortice lock, which were engaged for the duration of the test.

The results of the test were as follows:

	Integrity	**Insulation**
Doorset A	71 minutes	4 minutes
Doorset B	59 minutes	4 minutes

Test Date : 22nd August 2008

Sponsor : Sauerlander Spanplatten GmbH

Declaration by Sauerlander Spanplatten GmbH.

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

D. FORSHAW

Responsible Officer

PP C. Johnson* - Senior Certification Engineer

Approved

D Hankinson* - Senior Certification Engineer

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

Report Issued: 10th September 2008

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