

Title:

The Fire Resistance
Performance of Timber
Doorsets Incorporating Carlisle
Brass Lever Furniture

**WF Assessment Report
No:**

166737 Issue 4

Prepared for:

Carlisle Brass
Parkhouse Road
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Cumbria
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Date:

14th September 2007

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Foreword

This assessment report has been commissioned by Carlisle Brass and relates to the fire resistance of door hardware.

This assessment is for National Application and has been written in accordance with the general principles outlined in BS EN 15725: 2010; Extended application reports on the fire performance of construction products and building elements, as appropriate.

This assessment uses established empirical methods of extrapolation and experience of fire testing similar products, in order 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 resistance performance, if the elements were to be tested in accordance with EN1634 or BS476-22.

This assessment has been written using appropriate test evidence generated at a UKAS accredited laboratory to the relevant test standard. The supporting test evidence has been deemed appropriate to support the manufacturer's products and is summarised within the assessment.

The defined scope presented in this assessment report relates to the behaviour of the proposed door hardware under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the door hardware in use.

This assessment has been prepared and checked by Certification Engineers with the necessary competence, who subscribe to the principles outlined in the PFPF guidelines to undertaking assessments in lieu of fire tests. The aim of the PFPF guidelines is to give confidence to end-users that assessments that exist in the UK are of a satisfactory standard to be used in lieu of fire tests for building control and other purposes.

The PFPF guidelines are produced by the UK Fire Test Study Group (FTSG) an association of the major fire testing laboratories in the UK and are published by the PFPF, the representative body for the passive fire protection industry in the UK.

This report is not intended for use in support of EN 15269-2 and EN 15269-3 (Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware.), or CE Marking of Doorset to EN 16034 (Pedestrian doorsets, industrial, commercial, garage doors and openable windows. Product standard, performance characteristics. Fire resisting and/or smoke control characteristics).

Executive Summary

Objective This report considers the fire resistance performance of single-acting timber based doorsets, when fitted with Carlisle Brass lever furniture, as referenced later in this report.

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Summary of Conclusions Should the recommendations given in this report be followed, it can be concluded that previously fire tested (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire) timber doorsets which have achieved 20, 30, 60 or 120 minutes integrity in accordance with BS 476: Part 22: 1987 or BS EN 1634-1, as discussed in this report, may be fitted with Carlisle Brass lever furniture as detailed in Annex A, without detracting from the overall integrity performance of the doorset (and insulation where relevant).

This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with EN1634-1 or BS476-22, on the basis of the evidence referred to herein. We express no opinion as to whether that evidence, and/or this assessment, would be regarded by any Building Control authority as sufficient for that or any other purpose. This assessment is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.

Valid until 30th April 2025

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Introduction

This report considers the fire resistance performance of single-acting timber based doorsets, when fitted with Carlisle Brass lever furniture, as referenced later in this report.

The proposed doorsets are required to provide a fire resistance performance of 20, 30, 60 or 120 minutes integrity and where applicable insulation, with respect to BS 476: Part 22: 1987 or BS EN 1634-1.

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

It is assumed that the proposed architectural hardware will be fitted to timber based doorsets which have previously been shown to be capable of providing 20, 30 60 and 120 minutes integrity and where applicable.

Supporting wall

It is also 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 measured for the relevant fire tested doorset. In addition, it is assumed that the door leaves will be in the closed and latched position.

Doorset details

The lever furniture will always be used in combination with a lock/latch and it is therefore assumed that the tested doorset will have been tested or assessed when incorporating a latch/lock.

Proposals

It is proposed that previously fire tested (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire) timber doorsets which have achieved 20, 30, 60 or 120 minutes integrity and, where applicable, insulation performance, as discussed later in this report, may be fitted with Carlisle Brass lever furniture, in accordance with recommendations given in this report without detracting from the overall performance of the doorset.

It is also proposed that the doorsets may be of single or double-leaf configuration. Details of the proposed range of architectural furniture are as follows:

Lever Code					
DL355	EL32	DL17	DL54Y	FG26L	AO1
DL354	EL31	DL18	DL55	DL100	AO2
DL356	EL31U	DL16	DL55WC	DL101	AO3
DL351	EL31Y	DL17Y	DL54WCS	DI102	AO4
DL350	EL33	DL17U	DL461	DL100WC	AO5
DL352	EL42	DL68	DL460	DL100Y	AO6
DL279	EL41	DL67	DL462	SZC011Y	AO7
DL278	EL41Y	DL68WC	M68	SZC011	AO8
DL277	EL43	DL68U	M68WC	SZC012	EV5
DL345	EL60	DL30	M67	SZC013	PE5
DL344	EL61	DL30WC	M68Y	SZC031	LM5
DL346	EL62	DL31	M68U	SZC031Y	GI5
DL341	EL60Y	DL30U	DL27	SZC032	SA5
DL340	DL291	DL31WC	DL26	SZC033	NI5
DL342	DL290	DL30Y	DL27WC	SZC042	DA5
DL451	DL292	M63	DL271	SZC041	BO5
DL450	DL290Y8	M63Y	DL270	SZC041Y	BR5
DL452	DL290Y	M63WC	DL272	SZC043	EL5
DL454	DL191	M64	DL271Y	SZC053	UO5
DL455	DL190	M63U	DL265	SZC051	DISCPBL
DL456	DL192	DL75	DL266	SZC051Y	AT5
DL411	DL381	DL75WC	DL266Y	SZC052	EA5
DL410	DL380	DL75Y	DL266U	SZC010	SU5
DL412	DL382	DL76	DL267	SZC020	BL5
DL280	DL380Y	DL76WC	DL263	SZC030	DU5
DL281	DL380U	DL75U	MS10	SZC040	FR5
DL282	DL181	M30	MS9	SZC050	TO5
DL171	DL180	M30U	MS11	SZM200	OU5B
DL170	DL182	M30Y	MS5	SZM210	DL77
DL170Y	DL180Y	M30WC	MS6	SZM220	DL66
DL172	DL286	M31	MS7	SZM230	DL56
IR1	DL285	M31WC	FG1	SZM110	M32
IR2	DL287	M30E	FG1U	SZM160	M65
IR3	DL168	M30S	FG1Y	SZS010	DL32
EL12	DL168U	M30WCS	FG1WC	SZS030	FG3
EL11	DL167	DL64	FG1S	SZS040	DL3
EL11U	DL168WC	DL64WC	FG1WCS	SZS050	
EL11Y	DL168Y	DL64Y	FG2	SZS060	
EL13	DL166	DL65	FG2WC	SZS070	
EL22	DL167WC	DL65WC	FG27	SZS080	
EL21	DL301	DL54	FG27U	SZS120	
EL23	DL300	DL54S	FG27Y	SZS130	
EL21Y	DL302	DL54WC	FG27WC	SZS140	

Issue 2

Lever Code					
AR5	AR5				

Issue 3

Lever Code					
SZM370	CEB070	CEB080	CEB100	CEB110	CEB120
CEB130	CEB010Q	CEB020Q	CEB030Q	CEB040Q	CEB050Q
CEB060Q	EUL010	EUL020	EUL030	EUL040	EUL050

Assessed Performance

Levers, Roses & Escutcheons

Fire doors often incorporate locking/latching devices either to retain the doorset in the closed position during a fire or simply for keeping the doorset closed/locked in normal use.

The introduction of a lock/latch case into a timber based leaf can increase the risk of localised integrity failure, via either the mortise removing enough leaf material that premature burn through can occur, or by interruption of the intumescent seals around the leaf perimeter by the strike/forend plate.

This appraisal does not however consider the implications of installing a specific lock, within a specific timber fire door construction and only considers the influence of the lever handle furniture, the suitability of the door leaf and latch/lock should be demonstrated by separate test/assessment evidence.

All of the proposed lever handles are entirely surface mounted and therefore do not require any associated removal of timber from the leaf or interruption of intumescent seals around the leaf perimeter, these already being a consequence of the inclusion of the door lock or latch. The effect of the proposed lever furniture upon the fire resistance performance of the doorset, would therefore be expected to be negligible and no reduction in performance would be anticipated as a consequence of their inclusion.

Issue 2

Subsequent to the original assessment it is proposed that the VL5 (Vola Lever on round rose) and AR5 (Alamaro Lever on round rose) be added to this report, as identified in Annex A.

The additional handles proposed are manufactured from the same basic materials and require not additional material to be removed from the door, it is therefore reasonable to assume that the VL5 and AR5 handles are unlikely to have a deleterious effect on the performance, and therefore are positively appraised.

Issue 3

Subsequent to the original assessment it is proposed that the following lever furniture be added to this report, as identified in Annex A:



The additional handles proposed are entirely surface mounted (except for the fixings and spindle), manufactured from the same basic materials, fixed using bolt through M3 fixings, and require not additional material to be removed from the door, it is therefore reasonable to assume that the additional handles are unlikely to have a deleterious effect on the performance, and therefore are positively appraised.

Required Doorset specifications

The following requirements of the doorset and latch/lock are however considered to be essential:

- The doorset shall be of a timber construction and must have provided the required 20, 30, 60 or 120 minute integrity performance when tested at a UKAS accredited laboratory in accordance with BS 476: Part 22: 1987 or EN 1634-1, be assessed for the required period by Warringtonfire or Chiltern International Fire, or be CERTIFIRE approved for the required period.
- The tested/assessed doorset as described above must have been tested or assessed in the required configuration i.e. number of leaves and action.
- The tested doorset must have incorporated the required lock/latch or have been assessed by Warringtonfire or Chiltern International Fire /approved by CERTIFIRE to be suited to including the lock/latch for the required period. Alternatively the lock/latch may be detailed in a Warringtonfire or Chiltern International Fire assessment or CERTIFIRE approval to be suitable for use with the proposed door for the required period.

Conclusions

Previously fire tested (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire) timber doorsets which have achieved 20, 30, 60 or 120 minutes integrity in accordance with BS 476: Part 22: 1987 or BS EN 1634-1, as discussed in this report, may be fitted with Carlisle Brass lever furniture as detailed in Annex A, without detracting from the overall integrity performance of the doorset (and insulation where relevant).

Review

It has been confirmed by Carlisle Brass that there have been no changes to the specification, materials or manufacturing location of the lever furniture considered in the original appraisal referenced WF Assessment Report No. 166737 issue 3 issued 15th October 2019.

The original assessment has been written using appropriate test evidence generated at accredited test laboratories. The supporting test evidence has been deemed appropriate to support the manufacturers stated design.

The defined scope presented in the original assessment report relates to the behaviour of the proposed design under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the lever furniture in use.

This revalidation has been prepared and checked by product assessors with the necessary competence, who subscribe to the principles outlined in the PFPF guidelines to undertaking assessments in lieu of fire tests. The aim of the PFPF guidelines is to give confidence to end-users that assessments that exist in the UK are of a satisfactory standard to be used in lieu of fire tests for building control and other purposes.

The PFPF guidelines are produced by the UK Fire Test Study Group (FTSG) an association of the major fire testing laboratories in the UK and are published by the PFPF, the representative body for the passive fire protection industry in the UK.

The data used for the original appraisal has been re-examined and found to be satisfactory. The procedures adopted for the original assessment have also been re-examined and are similar to those currently in use.

Therefore, with respect to the assessment of performance given in WF Assessment Report No. 166737, the contents should remain valid for a further 5 years.

This review is based on information used to formulate the original assessment. No other information or data has been provided by Carlisle Brass which could affect this review.

The original appraisal report was performed in accordance with the principles of the UK Fire Test Study Group Resolution 82: 2001. This review has therefore also been conducted using the principles of Resolution 82: 2001.

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 Warringtonfire the assessment will be unconditionally withdrawn and Carlisle Brass 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 30th April 2025, after which time it is recommended that it be returned for re-appraisal.

This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with EN1634-1 or BS476-22, on the basis of the evidence referred to herein. We express no opinion as to whether that evidence, and/or this assessment, would be regarded by any Building Control authority as sufficient for that or any other purpose. This assessment is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.

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

Declaration by Carlisle Brass.

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 Warringtonfire to withdraw the assessment.

Signed:

For and on behalf of:

Signatories



Responsible Officer (Issue 4)

R Anning* - Principal Certification Engineer



Approved (Issue 4)

A Kearns* - Technical Manager

* For and on behalf of Warringtonfire.

Report Issued: 14th September 2007

Issue 2 – Addition of VL5 and AR5 handles + addition of revalidation date in accordance with 348668 (4th January 2017)

Issue 3 – Add levers (15th October 2019)

Issue 4 – 5 year review/revalidation (14th May 2020)

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

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Annex A

Lever Code						
DL355	EL32	DL17	DL54Y	FG26L	AO1	CEB120
DL354	EL31	DL18	DL55	DL100	AO2	CEB130
DL356	EL31U	DL16	DL55WC	DL101	AO3	CEB0100
DL351	EL31Y	DL17Y	DL54WCS	DI102	AO4	CEB0200
DL350	EL33	DL17U	DL461	DL100WC	AO5	CEB0300
DL352	EL42	DL68	DL460	DL100Y	AO6	CEB0400
DL279	EL41	DL67	DL462	SZC011Y	AO7	CEB0500
DL278	EL41Y	DL68WC	M68	SZC011	AO8	CEB0600
DL277	EL43	DL68U	M68WC	SZC012	EV5	EUL010
DL345	EL60	DL30	M67	SZC013	PE5	EUL020
DL344	EL61	DL30WC	M68Y	SZC031	LM5	EUL030
DL346	EL62	DL31	M68U	SZC031Y	GI5	EUL040
DL341	EL60Y	DL30U	DL27	SZC032	SA5	EUL050
DL340	DL291	DL31WC	DL26	SZC033	NI5	
DL342	DL290	DL30Y	DL27WC	SZC042	DA5	
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DL450	DL290Y8	M63Y	DL270	SZC041Y	BR5	
DL452	DL290Y	M63WC	DL272	SZC043	EL5	
DL454	DL191	M64	DL271Y	SZC053	UO5	
DL455	DL190	M63U	DL265	SZC051	DI5CPBL	
DL456	DL192	DL75	DL266	SZC051Y	AT5	
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IR3	DL168	M30S	FG1Y	SZS010	DL32	
EL12	DL168U	M30WCS	FG1WC	SZS030	FG3	
EL11	DL167	DL64	FG1S	SZS040	DL3	
EL11U	DL168WC	DL64WC	FG1WCS	SZS050	AR5	
EL11Y	DL168Y	DL64Y	FG2	SZS060	VL5	
EL13	DL166	DL65	FG2WC	SZS070	SZM370	
EL22	DL167WC	DL65WC	FG27	SZS080	CEB070	
EL21	DL301	DL54	FG27U	SZS120	CEB080	
EL23	DL300	DL54S	FG27Y	SZS130	CEB100	
EL21Y	DL302	DL54WC	FG27WC	SZS140	CEB110	