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Title:

The Fire Resistance Performance Of Timber Or Mineral Based Insulated Doorsets and Insulated and Uninsulated Steel Based Doorsets When Fitted With Surface Mounted or Concealed Door Closers

Report No:

144029, Issue 6

Prepared for:

LEADO DOOR CONTROLS LTD
No.4, Alley 54,
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Changhua County 510,
Taiwan R.O.C.

Date:

22nd December 2004

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Executive Summary

Objective

This report presents an appraisal of the fire resistance performance of single-acting timber doorsets when fitted with a Leado '913/915, 733/735', '680', '6824' or '836' surface mounted door closer, or a '380/385' concealed door closers, and single acting steel based doorsets when fitted with a Leado '913/915' or '836' surface mounted door closer, if tested in accordance with BS EN 1634-1.

Report Sponsor

Leado Door Controls Ltd

Address

No.4, Alley 54, Tien Jhong Yang Lane, Yuanlin Town, Changhua County 510, Taiwan R.O.C.

Summary of Conclusions

Should the recommendations given in this report be followed, it can be concluded that single-acting **timber/mineral-based doorsets**, which have previously been successfully fire tested by a UKAS accredited laboratory (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire), to have achieved up to 120 minutes integrity and insulation performance in accordance with BS EN 1634-1, as discussed in this report, may be fitted with '913/915', '733/735', '680', '6824' and '836' surface mounted overhead closers, without detracting from the overall achieved performance of the doorset.

Additionally, should the recommendations given in this report be followed, it can be concluded that single-acting **timber/mineral-based doorsets**, which have previously been successfully fire tested by a UKAS accredited laboratory (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire), to have achieved 60 minutes integrity and insulation performance in accordance with BS EN 1634-1, as discussed in this report, may be fitted with 380/385 concealed overhead closers, without detracting from the overall achieved performance of the doorset.

Additionally, should the recommendations given in this report be followed, it can be concluded that single-acting **fully-insulated steel-based doorsets or uninsulated steel-based doorsets (closer to the fire-risk face only)** which have previously been successfully fire tested by a UKAS accredited laboratory (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire), to have achieved up to 240 minutes integrity, and insulation performance where applicable, in accordance with BS EN 1634-1, as discussed in this report, may be fitted with Dorint 913, 915 and 836 surface mounted overhead closers, without detracting from the overall achieved performance of the doorset.

Valid until

11th January 2024

Introduction

This report presents an appraisal of the fire resistance performance of single-acting insulated (timber or mineral composite) doorsets when fitted with a Leado '913/915 or 733/735' surface mounted door closer or a '380/385' concealed door closer. The report also appraises the fire resistance performance of single acting steel based doorsets when fitted with a Leado '913/915' or '836' surface mounted door closer. The doorset, onto which the closer is to be fitted, may be of single-leaf or double-leaf configuration.

The proposed timber or mineral based doorsets are required to provide a fire resistance performance of 60 minutes (380/385) or up to 120 minutes (913/915, 733/735, 680, 6824 and 836) integrity and insulation with respect to BS EN 1634-1.

The proposed steel based doorsets are required to provide a fire resistance performance of 240 minutes (913/915 and 836) integrity, and insulation where appropriate, with respect to 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 Leado door closers will be fitted to an insulated doorset (timber or mineral composite) which has been previously shown to be capable of providing the required fire resistance performance when tested in accordance with BS EN 1634-1 in the proposed configuration i.e. single-leaf or double-leaf.

It is further assumed that the Leado '913/915' or '836' surface mounted door closers will be fitted to an steel-based doorset which has been previously shown to be capable of providing the required integrity, and insulation where appropriate, fire resistance performance when tested in accordance with BS EN 1634-1 in the proposed configuration i.e. single-leaf or double-leaf.

Additionally, where the doorset is required to provide 60 minutes integrity performance in conjunction with a 380/385 concealed closer, the door leaf shall include sub-facings comprising a minimum of 3 mm thick non-combustible board.

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.

Closer Installation

The closers shall be fixed with screws supplied by the closer manufacturer. Bolt-through fixings shall not be used.

Where the closers are fitted to door leaves or frames that are manufactured from mineral-based materials, or low-density cellulosic- based material, the door assembly shall have previously been shown capable of accommodating the installation of closers at the head of the doorset, without detriment to the door assembly's performance.

All closers used shall have power ratings appropriate to the leaf sizes subject to a minimum size 3 (as specified in BS EN 1154).

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 position.

Uninsulated steel-based doorsets

836, 915 and 913 surface mounted overhead closers must not be used on the fire-risk side only of uninsulated steel-based doorsets where a specific direction of fire exposure for the doorset cannot be identified

Proposals

It is proposed that a Leado '913/915', '733/735', '680' '6824' and '836' surface mounted door closer may be fitted onto a previously tested (in accordance with BS EN 1634-1) insulated (timber or mineral composite) doorset which has been shown to be capable of providing up to 120 minutes integrity and insulation in the same configuration as that proposed i.e. single-leaf or double-leaf.

It is also proposed that a Leado '913/915' or '836' surface mounted door closer may be fitted onto a previously tested (in accordance with BS EN 1634-1) steel-based doorset which has been shown to be capable of providing up to 240 minutes integrity, and insulation where appropriate, with respect to BS EN 1634-1 in the same configuration as that proposed i.e. single-leaf or double-leaf.

It is further proposed that a Leado '380/385' concealed door closer may be fitted onto a previously tested (in accordance with BS EN 1634-1) insulated (timber or mineral composite) doorset which has been shown to be capable of providing 60 minutes integrity and insulation in the same configuration as that proposed i.e. single-leaf or double-leaf.

Basic Test Evidence

The test referenced WARRES No. 143145 included two fully insulated, single-acting, single-leaf, timber doorsets

Door leaf A was retained via a concealed door closer referenced '385'. Door leaf B was retained via a surface mounted overhead door closer referenced '913'.

The leaves were orientated such that Doorset A opened towards the heating conditions of the test, and Doorset B opened away from the heating conditions. Each leaf was rendered unlatched for the duration of the test.

The test referenced WF No. 174172 included a fully insulated, single-acting, double-leaf, timber doorset.

The left hand door leaf was retained via a surface mounted door closer referenced '836 BC'. The right hand leaf was retained via a surface mounted overhead door closer referenced '680'. Both closers were mounted on the exposed face of the doorset in parallel arm configuration.

The doorset was orientated such that its leaves opened away from the heating conditions of the test. The doorset was unlatched for the duration of the test.

The test referenced WF No. 166580 included two uninsulated, single-acting, single-leaf, steel based doorsets.

Doorset B included a surface mounted overhead door closer referenced '915' mounted on its exposed side and an additional '915' closer body mounted to its non-exposed side.

The doorset was orientated such that the door leaf opened away from the heating conditions.

Assessed Performance

Manufacturing location

The closers were identified as being produced at the following manufacturing plant (J/010):

Hsing He Tswen
Wanjyang Chu
Dongguan City
Guangdong Province
523061 China

General

It is proposed that previously fire tested by a Notified laboratory (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire) timber or mineral based insulated doorsets may be fitted with a Leado '913/915', '733/735', '680' '6824' or '836' surface mounted door closer or a '380/385' concealed door closer in order to provide up to 120 minutes or 60 minutes respectively, without detracting from the performance of the doorset.

It is further proposed that previously fire tested by a Notified laboratory (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire) steel based uninsulated doorsets may be fitted with a Leado '913/915' or '836' surface mounted door closer in order to provide up to 240 minutes integrity, without detracting from the performance of the doorset.

913/915 Surface Mounted Door Closers

The only difference between the '913' and the '915' models is the ability of the latter to be power adjusted via a spring, thus requiring a closer body of slightly increased dimensions (236 mm compared to 206 mm). As both models have been proven under fire test conditions, albeit on different door types, this is not expected to have any significant effect on the performance and as such it is considered acceptable to justify the use of one model in a particular application using the test evidence of the other.

913/915 Surface Mounted Door Closers – Timber/Mineral doors

The performance of Doorset B during the test referenced WARRES No. 143145 is cited to display the ability of the proposed door closer to remain in place for a period of 35 minutes as detailed within the observations to the test report.

The test included insulated (timber based) door leaves and upon examination of the test reports it can be seen that there were no modes of integrity failure, which were either attributable to or co-incident with the performance or presence of the door closer, for the full test duration.

A surface mounted door closer is usually required to restrain a timber door leaf up until the time at which the intumescent seals react. After a test period of 10 -15 minutes the intumescent seals would be expected to have reacted and as such the restraint offered via the closer is deemed to be superfluous to requirements. The above referenced test therefore provides direct evidence on the ability of the proposed closers to be capable of restraining the door leaves for the required test period.

The door closer remained in place for a test period of 35 minutes, the intumescent seals had sufficiently reacted by this time to retain the door leaf for the remainder of the test duration.

The tested '913' closer comprised the same basic body design as those proposed and was installed in a parallel arm (Application/Figure 66) configuration. This is considered to represent the most onerous condition in terms of the ability of the closer to remain in place and provide restraint to the door leaf under standard fire test conditions.

The proposals require that the closers are to be used in a parallel arm (Application/Figure 66), projecting arm (Application/Figure 1) or transom mounted (Application/Figure 61) configuration. For the reasons detailed within the previous paragraph the proposals are deemed acceptable.

The arm utilised for the test was selected as being the more onerous specification in terms of profile and can therefore be assumed to provide positive information relating to the expected performance of alternative arms.

680 and 836 Surface Mounted Door Closers – timber based doors

The performance of the doorset during the test referenced WF No. 174172/B is cited to display the ability of the '680' and '836' surface mounted door closer models to remain in place for a period of between 10 and 25 minutes as detailed within the observations to the test report.

Upon close examination of the test report it can be seen that there were no modes of integrity failure, which were either attributable to or co-incident with the performance or presence of the door closers for the full test duration of 60 minutes.

As discussed previously, beyond a test period of 10 -15 minutes the intumescent seals would be expected to have reacted and as such the restraint offered via the closers would be no longer needed. The above referenced test therefore provides direct evidence on the ability of the proposed closers to be capable of restraining the door leaves for the required test period.

The proposals require that the closers are to be used in a parallel arm (Application/Figure 66), projecting arm (Application/Figure 1) or transom mounted (Application/Figure 61) configuration. As both closers were tested in the parallel arm configuration, discussed previously as the most onerous of the three proposed arm/installation configurations, the proposals are deemed acceptable.

6824 Surface Mounted Door Closer – timber based doors

The Dorint 6824 is an adjustable (power size 2-4) version of the tested fixed power (size 3) 680. The unit is essentially the same as the tested unit being constructed of the same materials and use the same arm assembly. The 6824 has a slightly longer body, which at 248 mm long, is 28 mm longer to accommodate the additional adjustment components.

Based on a review of the components and construction of the proposed 6824 and comparison with those of the tested 680, it has been concluded that the performance of the 6824 is justifiable using the known performance of the 680.

One additional requirement for the 6824 shall be that it must be adjusted to a minimum of power size 3 when fitted to a fire resisting doorset.

The proposals require that the 6824 closer is to be used in a parallel arm (Application/Figure 66), projecting arm (Application/Figure 1) or transom mounted (Application/Figure 61) configuration. As per the previous discussion for the 680 closer model which justified all of these installation applications, so the same justification shall be applied to the 6824 and the proposals are deemed acceptable.

Surface Mounted Door Closers – Steel based doors

It is proposed that Dorint 836, 915 and 913 surface mounted overhead closers, as manufactured at the plant in China provide a fire resistance performance of up to 240 minutes integrity and insulation with **fully-insulated** (for the required classification period) steel-based door assemblies, and the **fire risk side only of uninsulated steel-based door assemblies** with respect to EN 1634-1.

The use of closers on uninsulated steel doors requires further specific consideration as where they are fitted to the non-fire exposed face of an uninsulated doorset it must also be proven that it does not present an additional risk to the integrity performance of the doorset whereby the closer's components and hydraulic fluid must demonstrate that they are not ignited by the high levels of heat transfer through the metal doorset, typically 600-700^{o}C at 120 minutes, increasing to approximately 750-800^{o}C at 240 minutes.

To meet the insulation requirements on EN1634-1, the mean temperature rise of the unexposed surface shall not be greater than 140^{o}C and the maximum temperature rise shall not be greater than 180^{o}C (except on the door frame, where the maximum temperature rise shall not exceed 360^{o}C). Insulation failure also occurs simultaneously with integrity failure as specified in BS EN 1634-1.

It is therefore expected that should the surface mounted closers discussed above be incorporated on a fully insulated steel doorset, the heat through the face of the door/frame would be considerable reduced and the risks relating to the escape of any fluid within the closers, and the associated risk of ignition negated.

913/915 Surface Mounted Door Closers – Steel based doors

The performance of Doorset B during the test referenced WF No. 166580 is cited to display the ability of the '915' door closer to hold the door leaf in the closed position until such time as the expansion of the steel door caused it to jam within its frame.

The test included an uninsulated steel based door leaf and upon examination of the test report it can be seen that there were no modes of integrity failure, which were either attributable to or co-incident with the performance or presence of the door closer for the full test duration of 240 minutes.

The tested '915' closer was installed in a parallel arm (Application/Figure 66) configuration. This is considered to represent the most onerous condition in terms of the ability of the closer to remain in place and provide restraint to the door leaf under standard fire test conditions.

Evaluation of the fire test data above has established that an inactive 915 closer body only was fitted to the unexposed face of the door, this is not consider to be suitably representative of the active closers in use, consequently the 913/915 surface mounted door closers within this certificate are restricted to insulated steel doorsets only, fully-insulated to the required classification period. Alternatively the closers may alos be fitted to the fire-risk side only of uninsulated steel-based doorsets.

The closers must not be used on the fire-risk side only of uninsulated steel-based doorsets where a specific direction of fire exposure for the doorset cannot be identified

The proposals require that the '913/915' closers to be used in a parallel arm (Application/Figure 66), projecting arm (Application/Figure 1) or transom mounted (Application/Figure 61) configuration. For the reasons detailed within the previous section the proposals are deemed acceptable.

The tested '915' closer was fitted with a steel arm set and soffit plate. Where the closer is used in other configurations the associated arms and fixing plates should also be of steel.

836 Surface Mounted Door Closer – Steel based doors

The '836' model surface mounted closer does not have its own direct test evidence for use in conjunction with steel based doorsets, however it does share the same construction and components as the previously discussed '913/915' models. It is therefore reasonable to consider that, as both models have been proven under fire test conditions, albeit on different door types, this is not expected to have any significant effect on the performance and as such, in this instance, it is considered acceptable to justify the use of one model in a particular application using the test evidence of the other.

The '836' model also contains the same quantity and type of hydraulic fluid as the tested unit so does not provide any additional concern with regard to the potential for ignition of the fluid should it be fitted on the non-exposed face of a steel based doorset.

The 836 surface mounted door closers within this certificate are again restricted to insulated steel doorsets only, fully-insulated to the required classification period, or the fire-risk side only of uninsulated steel-based doorsets.

The closers must not be used on the fire-risk side only of uninsulated steel-based doorsets where a specific direction of fire exposure for the doorset cannot be identified

The proposals again require that the '836' closer may be used in a parallel arm (Application/Figure 66), projecting arm (Application/Figure 1) or transom mounted (Application/Figure 61) configuration. For the reasons detailed previously the proposals are deemed acceptable.

The tested closer was fitted with a steel arm set and soffit plate. This appraisal requires that in all fitting configurations the associated arms and fixing plates should also be of steel for the '836' model.

Stainless steel covers for 913/915 closers

The tested active closer assemblies did not include a cover. As the inclusion of a cover would be expected to afford some increased levels of protection to the closer body, this would be expected to have a positive effect on its ability to remain in place and restrain the door leaf. The use of stainless steel covers is therefore considered acceptable.

380 / 385 Concealed Door Closers

The tested assembly included a '385' model which included a body and track protected via 2 mm thick Lorient mono-ammonium phosphate material (Interdens).

The tested assembly restrained the doorset for the required period and did not incur any modes of integrity failure for the test duration of 66 minutes. This therefore provides direct test evidence relating to the ability of the proposed '385' closer to contribute towards a fire performance of 60 minutes.

The tested assembly which utilises the same basic specification as that of the '380' series but has a body of slightly increased dimensions. On the basis that a closer of reduced dimensions requires less timber material to be removed form the door leaf head, it is considered to present a less onerous condition and is positively appraised.

Back check function

All of the closer models detailed within this appraisal has an optional back check function, as this function does not alter the ability of any of the models to hold the door leaf in the closed position it is considered acceptable that models with or without back check function are equally acceptable. And in the case of surface mounted models, regardless of arm configuration be this parallel arm (Application/Figure 66) or projecting arm (Application/Figure 1).

Proposed Doorsets

As stated in this report, the doorset, in the required configuration, will be previously tested by an accredited UKAS laboratory (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire) and its performance is therefore not in doubt.

To enable the use of the door closers on a range of doorsets, it is necessary to address the available information on the proposed doorset. As this appraisal is intended to be used on a general basis and not restricted to any particular manufacturer of fire resisting doorsets, the following points are given to enable the closers to be used safely:

a) Timber or mineral based doorsets shall carry valid certification or the doorset, including the door frame and associated ironmongery should have achieved up to 120 minutes integrity, when tested by a Notified laboratory (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire) to BS EN 1634-1.

b) Steel based doorsets shall carry valid certification or the doorset, including the door frame and associated ironmongery should have achieved up to 240 minutes integrity, and insulation where applicable, when tested by a Notified laboratory (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire) to BS EN 1634-1.

c) If the proposed doorset is to be used in double-leaf configuration the test or assessment evidence should be applicable to double-leaf configurations.

d) Where the doorset is required to provide 60 minutes integrity performance in conjunction with a 380/385 concealed closer, the door leaf shall include sub-facings comprising a minimum of 3 mm thick non-combustible board.

e) The critical aspects of the doorset construction are given earlier in this report and shall be replicated on the proposed doorset

836, 915 and 913 surface mounted overhead closers must not be used on the fire-risk side only of uninsulated steel-based doorsets where a specific direction of fire exposure for the doorset cannot be identified

Conclusions

Summary of Conclusions

Should the recommendations given in this report be followed, it can be concluded that single-acting **timber / mineral-based doorsets**, which have previously been successfully fire tested by a UKAS accredited laboratory (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire), to have achieved up to 120 minutes integrity and insulation performance in accordance with BS EN 1634-1, as discussed in this report, may be fitted with '913/915', '733/735', '680', '6824' and '836' surface mounted overhead closers, without detracting from the overall achieved performance of the doorset.

Additionally, should the recommendations given in this report be followed, it can be concluded that single-acting **timber / mineral-based doorsets**, which have previously been successfully fire tested by a UKAS accredited laboratory (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire), to have achieved 60 minutes integrity and insulation performance in accordance with BS EN 1634-1, as discussed in this report, may be fitted with 380/385 concealed overhead closers, without detracting from the overall achieved performance of the doorset.

Additionally, should the recommendations given in this report be followed, it can be concluded that single-acting **fully-insulated steel-based doorsets or uninsulated steel-based doorsets (closer to the fire-risk face only)** which have previously been successfully fire tested by a UKAS accredited laboratory (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire), to have achieved up to 240 minutes integrity, and insulation performance where applicable, in accordance with BS EN 1634-1, as discussed in this report, may be fitted with Dorint 913, 915 and 836 surface mounted overhead closers, without detracting from the overall achieved performance of the doorset.

The fitting of the door closers into alternative doorsets, on the basis of compliance with the conditions given above, is therefore considered to be acceptable.

Review

It has been confirmed by Leado Door Controls Ltd that there have been no changes to the specification, materials or manufacturing location of the Door Closers considered in the original appraisal referenced WF Assessment Report No. 144029 issue 5 dated 10th July 2013.

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. 144029 issue 5, 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 Leado Door Controls Ltd 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 Leado Door Controls 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 11th January 2024,, 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.

This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with EN1634-1, on the basis of the evidence referred to 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.

Summary of Primary Supporting Data

WARRES No. 143145

Test report relating to the performance of two fully insulated, single-acting, single-leaf, timber doorsets incorporating a surface mounted and concealed overhead door closers, when subjected to a test in accordance with BS EN 1634-1: 2000 to determine its fire resistance performance.

The doorsets had overall dimensions of 2080 mm high by 1010 mm wide and incorporated door leaves of overall dimensions 2040 mm high by 926 mm and by 52 mm thick. The leaves comprised softwood stiles and rails, a flaxboard core, with non-combustible board sub facings, hardwood lippings to the vertical edges and MDF outer facings.

Door leaf A was retained via a concealed door closer referenced '385'. Door leaf B was retained via a surface mounted overhead door closer referenced '913'.

The leaves were orientated such that Doorset A opened towards the heating conditions of the test, and Doorset B opened away from the heating conditions. Each leaf was rendered unlatched for the duration of the test.

The specimen satisfied the test requirements for the following periods:

		Doorset A	Doorset B
Integrity	Sustained Flames	66 minutes*	66 minutes*
	Gap Gauge	66 minutes*	66 minutes*
	Cotton Pad	66 minutes*	66 minutes*
Insulation		66 minutes*	66 minutes*

* The test duration.

Test date : 11th November 2004

Test sponsor : Puma Distribution (permission has been provided for this test report to be utilised for the purposes of this appraisal)

WF No. 166580

Test report relating to the performance of two specimens of uninsulated, single-acting, single-leaf doorset incorporating various items of building hardware, including a surface mounted '915' closer, when subjected to a test in accordance with BS EN 1634-1: 2000 to determine their fire resistance performance.

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

Doorset B had overall dimensions of 2092 mm high by 990 mm wide and incorporated a door leaf of overall nominal dimensions 2051 mm high by 924 mm wide by 45 mm thick. The doorset briefly comprised a profiled mild steel door frame and a door leaf formed from 1.2 mm thick mild steel skins, head and base channels and a core of paper honeycomb. The door leaf was mounted within the frame on three steel butt hinges. The doorset was provided with two sets of latch, locksets and handles, a Leado Door Controls surface mounted overhead door closer referenced '915' fitted to the exposed face of the doorset. An additional '915' closer body was mounted on the unexposed face of the door leaf.

The doorsets were installed such that the leaf of Doorset A opened towards, and the leaf of Doorset B opened away from heating conditions of the test.

Doorset B satisfied the test requirements for the following periods:

		Doorset B
Integrity	Sustained Flames	62 minutes
	Gap Gauge	240 minutes*
	Cotton Pad	50 minutes*
Insulation		4 minutes

* The test duration. The test was discontinued after a period of 240 minutes.

Test date : 20th April 2005

Test sponsor : Leado Door Controls Limited

WF No. 174172/B

Test report relating to the performance of a single specimen of fully insulated, single-acting, double-leaf, timber doorset incorporating various items of building hardware, including a surface mounted '680' and '836 BC' closers, when subjected to a test in accordance with BS EN 1634-1: 2000 to determine its fire resistance performance.

The doorset was of overall dimensions 2080 mm high by 1957 mm wide. Each door leaf had overall dimensions of 2038 mm high by 942 mm wide by 52 mm thick comprising softwood stiles and rails, a flaxboard core, non conbustible board sub facings and chipboard outer facings with hardwood lippings on the vertical edges. The meeting edge of the doorset was rebated. The doorset was hung within a hardwood frame on six zinc plated steel hinges, and was mounted such that it opened away from the heating conditions of the test. The doorset was unlatched for the duration of the test.

For the purposes of the test when viewed for the unexposed side the left-hand leaf was referenced Door Leaf A and the right-hand leaf was referenced Door Leaf B. The exposed face of Door Leaf A was fitted with a Panic Latch Assembly device and closer referenced 'Leado Door Controls 836 BC', Door Leaf A also had a mortice latch. The exposed face of Door Leaf B included a Panic Bolt Assembly and closer referenced 'Leado Door Controls Ltd 680'.

The doorset satisfied the test requirements for the following periods:

		Doorset B
Integrity	Sustained Flames	55 minutes
	Gap Gauge	60 minutes*
	Cotton Pad	54 minutes
Insulation		54 minutes

* The test duration. The test was discontinued after a period of 60 minutes.

Test date : 4th July 2008

Test sponsor : Leado Door Controls Limited

Declaration by Leado Door Controls Ltd

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 6)

R. Anning* - Principle Certification Engineer

Approved (Issue 6)

A. Kearns* - Technical Manager

* For and on behalf of Warringtonfire.

Report Issued: 22nd December 2004

Issue 2 Inclusion of steel door applications for 913/915 closers 27th June 2008

Issue 3 Inclusion of 680 and 836 models 9th April 2009

Issue 4 Inclusion of the 6824 closer model 21st December 2011

Issue 5 Report revalidated and sponsor address amended 10th July 2013

Issue 6 Review and revalidation. Update of steel doorset scope 11th January 2019

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