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Title:

The Fire Resistance Performance Of Timber Or Mineral Composite Based Insulated Doorsets When Fitted A With A Neptis SLT Or Neptis LET As A Door Closer

Report No:

WF 347090 Issue 2

Prepared for:

LABEL spa

Via Ilariuzzi 17/A - 43126 - S.Pancrazio Parmense PARMA Italy

Date:

11th December 2014

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Executive Summary

Objective

This report presents an appraisal of the fire resistance performance of insulated, single-acting timber and mineral composite based doorsets when fitted with a Neptis SLT or Neptis LET operator when acting as a door closer, if tested in accordance with BS EN 1634-1.

Report Sponsor

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Summary of Conclusions

Should the recommendations given in this report be followed, it can be concluded that the LABEL spa Neptis SLT or Neptis LET may be fitted to previously tested or assessed (by Exova Warringtonfire) timber and mineral composite based insulated doorsets, to provide up to 120 minutes integrity and insulation performance, if tested in accordance with BS EN 1634-1.

Valid until

1st January 2020

Introduction

This report presents an appraisal of the fire resistance performance of single-acting insulated (timber or mineral composite) doorsets when fitted with a LABEL spa Neptis SLT or Neptis LET as a door closer. The doorset, onto which the closer is to be fitted, may be of single-leaf or double-leaf configuration.

The Neptis SLT is a door operator designed to both open and close the door leaves of doorsets. The concern of this appraisal is only to consider the performance of the unit in terms of its ability to maintain an unlatched door in the closed position under standard fire test conditions, without detracting from the previously proven fire performance of the doorset. The unit will be referred to as a door closer for the purpose of the appraisal.

The Neptis LET is identical to the Neptis SLT with the exception that the control unit's software limits the loading capacity to 120kg as opposed to a maximum loading capacity of 250kg supported by the Neptis SLT.

The proposed doorsets are required to provide a fire resistance performance of up to 120 minutes integrity and insulation 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

Doorset details

It is assumed that the LABEL spa Neptis SLT or Neptis LET door closer 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.

Supporting wall

It is also assumed that the construction of the wall, which supports the proposed doorsets and the operator, 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 or the operator 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 position.

Proposals

It is proposed that a LABEL spa Neptis SLT or Neptis LET door closer may be fitted onto a previously tested (in accordance with BS EN 1634-1) insulated timber or mineral composite based 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.

Basic Test Evidence

WF No. 340092 issue 2

The test referenced WF No. 340092 issue 2 included two fully insulated, single-leaf, timber doorsets.

Doorset A was fitted with various items of door hardware including a Neptis SLT mounted on the pull side of the doorset.

The doorset was orientated such that the door leaf opened towards the heating conditions of the test and was rendered unlatched for the duration of the test.

The specimen continued to satisfy the test requirements for the test duration of 32 minutes.

Assessed Performance

It is proposed that previously fire tested (or assessed by Exova Warringtonfire) timber or mineral composite based insulated doorsets may be fitted with a LABEL spa Neptis SLT or Neptis LET as a door closer in order to provide up to 120 minutes integrity, without detracting from the performance of the doorset.

General

Where a doorset is fitted with a surface mounted door closer, required to provide an essential retaining function, it is usually required to retain a timber based 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 provide retention of the door leaf and, as such, the restraint offered via the closer is deemed to be superfluous to requirements.

The referenced test is therefore cited to provide direct evidence on the ability of the proposed closer to be capable of retaining a door leaf for the required period and that it may be installed into the referenced doorset constructions without detracting from the integrity performance of the doorset for the required period.

Review of the observations taken during the test shows that the tested closer demonstrated its ability to retain the unlatched door leaf within its frame for the required period. The unit was recorded as beginning to fall away from the doorset after a period or 20 minutes.

The doorset was of a 60 minute designation and, although integrity failures did occur prior to the required period, these were not as a consequence of the presence or performance of the closer unit. The test is therefore considered to provide direct evidence relating to the ability of the proposed closer to contribute towards the fire performance of 60 minutes in terms of both its ability to maintain the door leaf in the closed position and to contribute positively towards the integrity performance of the doorset for in excess of 60 minutes.

It is also considered that should the proposed closer be fitted to timber or composite material based, insulated doorsets designed to provide up to 120 minutes fire resistance; it would remain in place for a similar period, thereby enabling the intumescent seals to react and effectively take over the restraint of the door leaf.

The tested unit was mounted to the face of a masonry wall on the pull side of the doorset and connected to the door leaf via a 'BDT2' slide pull arm.

It is therefore a requirement of this appraisal that the unit shall be similarly mounted on the pull side of the doorset and fitted with the same 'BDT2' arm arrangement.

The construction of the Neptis LET model is identical to the tested Neptis SLT model, with the exception that the software installed in the Neptis LET control unit, limits the loading capacity to 120kg. The software limitation isn't expected to have any impact on the required integrity and insulation performance, where the size and weight of the doorset is compatible with the closers rating.

Proposed Doorsets

As stated in this report, the doorset, in the required configuration, will be previously tested (or assessed by Exova Warringtonfire) and its performance is therefore not in doubt.

To enable the use of the door closer 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 closer to be used safely:

a) The doorset shall carry valid certification or the doorset, including the door frame and associated ironmongery should have achieved up to 120 minutes (as relevant) integrity, when tested by a UKAS approved laboratory (or assessed by Exova Warringtonfire) to BS EN 1634-1.

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

c) Likewise, if the proposed doorset is to be used in unlatched configurations then the available test evidence should be applicable to unlatched doorsets.

d) The size and weight of the proposed doorset should be compatible with the power rating of the closer.

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

Conclusions

Timber or mineral composite based doorsets that have previously been successfully fire tested by a UKAS accredited laboratory (or assessed by Exova Warringtonfire) which have achieved up to 120 minutes integrity and insulation as discussed in this report, may be fitted with LABEL spa Neptis SLT as a door closer, without detracting from the overall performance of the doorset.

The fitting of the door closer to alternative doorsets, on the basis of compliance with the conditions given in this report, is therefore considered to be acceptable.

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 Exova Warringtonfire the assessment will be unconditionally withdrawn and **LABEL spa** 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 January 2020, 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. 340092 issue 2

The test referenced WF No. 340092 included two single-leaf timber based doorsets. The doorsets were referenced as 'Doorset A' and 'Doorset B' for the purpose of the test. Doorset A was of a single-acting configuration and Doorset B was of a double-acting configuration.

Doorset A had overall nominal dimensions of 2100 mm high by 1000 mm wide and incorporated a door leaf with dimensions of 2060 mm high by 920 mm wide by 54 mm thick. The door leaf was of a solid graduated density chipboard construction, with hardwood lippings to all edges and was hung within a hardwood frame, on pivots. The doorset included various items of door hardware including a LABEL spa Neptis SLT door operator mounted on the exposed side of the doorset.

The doorset was orientated such that the doorset opened towards the heating conditions of the test and was rendered unlatched for the duration of the test.

The specimen satisfied the test requirements for the following periods:

		Doorset A
Integrity	Sustained Flames	32 minutes
	Gap Gauge	43 minutes
	Cotton Pad	32 minutes
Insulation		32 minutes

The test was discontinued after a period of 63 minutes.

Test date : 2nd May 2014

Permission has been provided for this test report to be utilised for the purposes of this appraisal.

Declaration by LABEL spa

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 Exova Warringtonfire to withdraw the assessment.

Signed:

For and on behalf of:

Signatories

Responsible Officer

S Gilfedder* - Certification Engineer

Approved

A Kearns* - Technical Manager

* For and on behalf of Exova Warringtonfire.

Report Issued: 11th December 2014	
Issue 2: 14th January 2016	Inclusion of the Neptis LET model.

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