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Testing. Advising. Assuring.

Title:

The Fire Resistance
Performance of Doorsets
Incorporating Various Items of
Frisco Door Furniture

WF Assessment Report No:

169279 Issue 3

Prepared for:

Frisco (UK) Sales Ltd

Unit 14 Pindar Road
Essex Road
Hoddesdon
Herts
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Date:

8th February 2008

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Executive Summary

Objective	This report considers the fire resistance performance of previously tested doorsets, when fitted with various items of Frisco door furniture, as referenced later in this report.
Report Sponsor	Frisco (UK) Sales Ltd
Address	Unit 14 Pindar Road Essex Road Hoddesdon Herts EN11 0DE
Summary of Conclusions	Should the recommendations given in this report be followed, it can be concluded that previously fire tested (or assessed by Exova Warringtonfire) doorsets which have achieved 20, 30, 60, 120 or 240 minutes integrity in accordance with BS 476: Part 22: 1987 or BS EN 1634-1: 2000, as discussed in this report, may be fitted with Frisco door furniture as detailed in Annex A, without detracting from the overall integrity performance of the doorset (and insulation where relevant).
Valid until	31 st March 2018

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Introduction

This report considers the fire resistance performance of previously tested doorsets, when fitted with various items of Frisco door furniture, as referenced later in this report.

The proposed doorsets are required to provide a fire resistance performance of 20, 30, 60, 120 or 240 minutes integrity and where applicable insulation, with respect to BS 476: Part 22: 1987 or BS EN 1634-1: 2000.

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 doorsets which have previously been shown to be capable of providing 20, 30, 60, 120 and 240 minutes integrity and where applicable insulation performance.

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 if required, latched position.

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 Exova Warringtonfire) doorsets which have achieved 20, 30, 60, 120 or 240 minutes integrity and, where applicable, insulation performance, as discussed later in this report, may be fitted with various items of Frisco door 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. The following 'Eclipse' branded product ranges are considered within this report:



Assessed Performance

Aerotek Range

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.

In terms of the Aerotek Range, it is not however necessary to consider the implications of installing a specific lock, within a specific fire door construction, since only the lever handle furniture and other surface mounted items are included within the range. The suitability of the door leaf and latch/lock should be demonstrated by separate test/assessment evidence.

All of the proposed lever handles, thumb turns etc. are entirely surface mounted and therefore do not require any associated cutting of apertures or removal of material 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.

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

- The doorset must have provided the required 20, 30, 60, 120 or 240 minute integrity performance when tested at a UKAS accredited laboratory in accordance with BS 476: Part 22: 1987 or EN 1634-1: 2000, be assessed for the required period by Exova Warringtonfire 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 Exova Warringtonfire/approved by CERTIFIRE to be suited to including the lock/latch for the required period. Alternatively the lock/latch may be detailed in a Exova Warringtonfire assessment or CERTIFIRE approval to be suitable for use with the proposed door for the required period.

Other items within the Aerotek Range, which on the same principle of being surface mounted, may be used with previously proven doorsets are pull handles, finger/kick plates, bolts, signage, knobs, stops, hooks and pulls. The doors that these items may be applied to shall meet the specifications already described above.

Additionally in the case of back to back pull handles with through fixings, it is essential that the holes through timber doorset are not drilled oversize and that the through fixings are bedded onto intumescent mastic. In the case of steel doors which incorporate a core material, welded steel sleeves must be provided for the through fixings.

The Aerotek Range letter plates and flush pulls are not covered by this assessment.

A full list of the positively appraised Aerotek Range items is included within the Annex to this report.

Architectural Furniture

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.

In terms of the Architectural Furniture range, it is not however necessary to consider the implications of installing a specific lock, within a specific fire door construction, since only the lever handle furniture and other surface mounted items are included within the range. The suitability of the door leaf and latch/lock should be demonstrated by separate test/assessment evidence.

All of the proposed lever handles, thumb turns etc. are entirely surface mounted and therefore do not require any associated cutting of apertures or removal of material 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.

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

- The doorset must have provided the required 20, 30, 60, 120 or 240 minute integrity performance when tested at a UKAS accredited laboratory in accordance with BS 476: Part 22: 1987 or EN 1634-1: 2000, be assessed for the required period by Exova Warringtonfire 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 Exova Warringtonfire/approved by CERTIFIRE to be suited to including the lock/latch for the required period. Alternatively the lock/latch may be detailed in a Exova Warringtonfire assessment or CERTIFIRE approval to be suitable for use with the proposed door for the required period.

A full list of the positively appraised Architectural Furniture range items is included within the Annex to this report.

Black Antique Range

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.

In terms of the Black Antique Range of levers and accessories (a mortice sashlock will be discussed later), it is not however necessary to consider the implications of installing a specific lock, within a specific fire door construction, the suitability of the door leaf and latch/lock should be demonstrated by separate test/assessment evidence.

All of the proposed lever handles, thumb turns etc. are entirely surface mounted and therefore do not require any associated cutting of apertures or removal of material 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.

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

- The doorset must have provided the required 20, 30, 60, 120 or 240 minute integrity performance when tested at a UKAS accredited laboratory in accordance with BS 476: Part 22: 1987 or EN 1634-1: 2000, be assessed for the required period by Exova Warringtonfire 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 Exova Warringtonfire/approved by CERTIFIRE to be suited to including the lock/latch for the required period. Alternatively the lock/latch may be detailed in a Exova Warringtonfire assessment or CERTIFIRE approval to be suitable for use with the proposed door for the required period.

Other items within the Black Antique Range, which on the same principle of being surface mounted, may be used with previously proven doorsets are finger plates, bolts, knockers, signage, knobs, stops, hooks, studs and pulls. The doors that these items may be applied to shall meet the specifications already described above.

The Black Antique Range letter plates, hinges and non-door related fittings (electrical switches etc.) are not covered by this assessment.

Additionally the Black Antique Range also incorporates a 3 lever mortice sashlock the dimensions and materials of which are comparable to those of the 'Eclipse ez-R' sashlock included within the test referenced WF No. 167471. This test demonstrated that the inclusion of the 'Eclipse ez-R' sashlock had no deleterious effects upon the tested timber based doorset for in excess of 60 minutes and based upon this it is considered that the proposed Black Antique Range locks may be included with suitable timber based doorsets, as detailed below:

The timber doorset, including door frame, intumescent seals and associated ironmongery should have achieved 30 or 60 minutes integrity as required and, where applicable, insulation when tested by a UKAS approved laboratory (or assessed by Exova Warringtonfire) to BS 476: Part 22: 1987 or EN 1634-1:2000.

The critical aspects of the doorset construction are considered to be the material of the door frame, the leaf to frame clearance gaps and the lipping material. Attention should be paid to these details and these should not be amended from that previously fire tested. Where this information is not known the following minimum specification will be followed:

- a) Door frame density - 500 kg/m³ (30 minutes) / 650 kg/m³ (60 minutes)
- b) Leaf to frame clearance gaps not to exceed 2.5 mm average and 3 mm maximum,
- c) Lipping density - 500 kg/m³ (30 minutes) / 650 kg/m³ (60 minutes)
- d) Door leaf thickness – 44 mm minimum (30 minutes) / 54 mm minimum (60 minutes)
- e) The door leaf must incorporate non-combustible sub-facing boards

Additionally, the amount of interruption to the intumescent seal specification at the door leaf to frame perimeter clearance gaps should be replicated or reduced from that originally specified for the tested doorset and the lock forend, strike and case must all be wrapped in 2 mm of intumescent sheet material e.g. Interdens.

If the proposed doorset is to be used in double-leaf configurations, the test or assessment must relate to this configuration.

A full list of the positively appraised Black Antique Range items is included within the Annex to this report.

Designer Lever Range

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.

In terms of the Designer Lever Range, it is not however necessary to consider the implications of installing a specific lock, within a specific fire door construction, since only lever handle furniture is included within the range. 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 cutting of apertures or removal of material 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.

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

- The doorset must have provided the required 20, 30, 60, 120 or 240 minute integrity performance when tested at a UKAS accredited laboratory in accordance with BS 476: Part 22: 1987 or EN 1634-1: 2000, be assessed for the required period by Exova Warringtonfire 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 Exova Warringtonfire/approved by CERTIFIRE to be suited to including the lock/latch for the required period. Alternatively the lock/latch may be detailed in a Exova Warringtonfire assessment or CERTIFIRE approval to be suitable for use with the proposed door for the required period.

A full list of the positively appraised Designer Lever Range items is included within the Annex to this report.

Door Closer Range

The 'Door Closer Range' incorporates 70, 600, 93 & 900 series surface mounted overhead door closing devices which have already been considered within the appraisal report referenced WFRC Report No. 135669. This report concludes that these closers are suitable for use with previously tested timber based up to FD60 doorsets and previously tested up to FD240 steel doorsets, in standard/projecting arm configuration (also limited to mounting on the 'fire risk' side of steel doorsets only). The report referenced WFRC Report No. 135669 has been reviewed for the purpose of this report and its findings are considered to be applicable to this report also and the proposed closing devices are therefore positively appraised.

'17971' & '17952' concealed closing devices are also included within the 'Door Closer Range' and based upon the '17971' being successfully incorporated in both 30 minute and 60 minute door constructions in the test referenced WFRC No. 134350 and the '17952' device being identical other than its finish, it is considered that the proposed concealed closing devices may be fitted to previously tested FD30 & FD60 timber based doorsets, subject to the following:

The timber doorset, including door frame, intumescent seals and associated ironmongery should have achieved 30 or 60 minutes integrity as required and, where applicable, insulation when tested by a UKAS approved laboratory (or assessed by Exova Warringtonfire) to BS 476: Part 22: 1987 or EN 1634-1:2000.

- a) Door frame density - 500 kg/m³ (30 minutes) / 650 kg/m³ (60 minutes)
- b) Leaf to frame clearance gaps not to exceed 2.5 mm average and 3 mm maximum,
- c) Lipping density - 500 kg/m³ (30 minutes) / 650 kg/m³ (60 minutes)
- d) Door leaf thickness – 44 mm minimum (30 minutes) / 54 mm minimum (60 minutes)
- e) FD60 door leaves must incorporate non-combustible sub-facing boards
- f) The doorset must be in the closed and latched position.

Additionally, the amount of interruption to the intumescent seal specification at the door leaf to frame perimeter clearance gaps should be replicated or reduced from that originally specified for the tested doorset and the closer body must all be wrapped in 1 mm of intumescent sheet material e.g. Interdens.

If the proposed doorset is to be used in double-leaf configurations, the test or assessment must relate to this configuration.

The 'Door Closer Range' also incorporates stainless steel spring hinges, some of which have already been considered within the appraisal report referenced WFRC Report No. 135669. This report concludes that these hinges are suitable for use with previously tested timber based FD60 doorsets and the additional proposed spring hinges are considered to be equivalent to those appraised, in terms of materials, dimensions and design. The report referenced WFRC Report No. 135669 has been reviewed for the purpose of this report and its findings are also considered to be applicable to this report and the proposed spring hinges are therefore positively appraised subject to the following:

The timber doorset, including door frame, intumescent seals and associated ironmongery should have achieved 60 minutes integrity as required and, where applicable, insulation when tested by a UKAS approved laboratory (or assessed by Exova Warringtonfire) to BS 476: Part 22: 1987 or EN 1634-1:2000.

- a) Door frame density - 650 kg/m³
- b) Leaf to frame clearance gaps not to exceed 2.5 mm average and 3 mm maximum,
- c) Lipping density - 650 kg/m³
- d) Door leaf thickness – 54 mm minimum
- e) The doorset must be in the closed and latched position.

Additionally, the amount of interruption to the intumescent seal specification at the door leaf to frame perimeter clearance gaps should be replicated or reduced from that originally specified for the tested doorset and the hinge blades must all be bedded onto 2 mm of intumescent sheet material e.g. Interdens.

Other entirely surface mounted hardware such as door selectors, single panic bolts/latches and push pad latches are also included in the 'Door Closer Range' and since these items do not require and cutting into or removal of material from the doorset, they would not be expected to have any deleterious effects upon the performance of previously tested timber or steel based doorsets.

A full list of the positively appraised Door Closer Range items is included within the Annex to this report.

Eclipse Hinge Range – Timber Doors

The 'Eclipse Hinge Range' incorporates steel & stainless steel hinges with dimensions of 102 x 76/102 x 3 mm, some of which have already been considered within the appraisal report referenced WFRC Report No. 135669. This report concludes that these hinges are suitable for use with previously tested timber based FD30 & FD60 doorsets and the additional proposed hinges are considered to be equivalent to those appraised, in terms of materials, dimensions and design. The report referenced WFRC Report No. 135669 has been reviewed for the purpose of this report and its findings are also considered to be applicable to this report and the proposed hinges are therefore positively appraised subject to the following:

The timber doorset, including door frame, intumescent seals and associated ironmongery should have achieved 30 or 60 minutes integrity as required and, where applicable, insulation when tested by a UKAS approved laboratory (or assessed by Exova Warringtonfire) to BS 476: Part 22: 1987 or EN 1634-1:2000.

- a) Door frame density - 500 kg/m³ (30 minutes) / 650 kg/m³ (60 minutes)
- b) Leaf to frame clearance gaps not to exceed 2.5 mm average and 3 mm maximum,
- c) Lipping density - 500 kg/m³ (30 minutes) / 650 kg/m³ (60 minutes)
- d) Door leaf thickness – 44 mm minimum (30 minutes) / 54 mm minimum (60 minutes)

Additionally, the amount of interruption to the intumescent seal specification at the door leaf to frame perimeter clearance gaps should be replicated or reduced from that originally specified for the tested doorset and the hinge blades must all be bedded onto 1 mm (30 minutes) or 2 mm (60 minutes) of intumescent sheet material e.g. Interdens.

Further steel & stainless steel hinges of dimensions 102 x 67 & 76 x 52 x 2 are also included in the range. The test referenced WF No. 167471 incorporated a 44 mm timber doorset (Doorset A) hung on similar 76 x 51 x 2 mm '14851' hinges and provided 35 minutes integrity performance. Based upon this successfully tested similar, smaller hinge, it can confidently be predicted that the proposed 'Eclipse' hinges may be utilised with 30 minute fire resisting timber doors as described above, without any anticipated deleterious effects.

14101/2/3

The models 14101, 14102 and 14103 are all mild steel ball bearing butt hinges of identical design to the tested 14851. These models differ from each other only in respect of their finishes which are satin chrome, polished chrome and electro brass respectively. The change of material from that of the tested mild steel hinge to mild steel for the proposed hinge models is not considered to have any negative influence on the performance of the hinges when used in the proposed application with 30 minute fire resisting timber based doors. The proposed hinges are therefore positively appraised.

Eclipse Hinge Range – Steel Based Doors

Of the range of hinges previously discussed, several models are currently Certifire approved (CF336). Of these, the following models have additional approval for use with steel based doorsets for fire resistance periods of up to 240 minutes.

14858, 14860, PK858, PK860, 14854, 14853, PK854, PK853, 14882, PK882, 14861, 14869, 14872, 14879, 14883, 14884, 14866, 14888 & 14889.

The above hinges are all of stainless steel construction and have been approved for use with steel based doorsets for fire resistance periods of up to 240 minutes. It is therefore considered acceptable that the scope of use for these hinge models, when fitted to steel based doorsets, may also be included in this appraisal.

The following requirements of the doorset are however considered to be essential:

- The doorset must have provided the required 20, 30, 60, 120 or 240 minute integrity performance when tested at a UKAS accredited laboratory in accordance with BS 476: Part 22: 1987 or EN 1634-1: 2000, be assessed for the required period by Exova Warringtonfire 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 maximum door mass shall be commensurate with the class of the relevant hinge and shall not be exceeded.

A full list of the positively appraised Eclipse Hinge Range items is included within the Annex to this report.

Eclipse Security Range

The Eclipse Security Range incorporates several mortice latch/locks the dimensions and materials of which are comparable to those of the 'Eclipse ez-R' sashlock included within the test referenced WF No. 167471. This test demonstrated that the inclusion of the 'Eclipse ez-R' sashlock had no deleterious effects upon the tested timber based doorset for in excess of 60 minutes and based upon this it is considered that the proposed Black Antique Range locks may be included with suitable timber based doorsets, as detailed below:

The timber doorset, including door frame, intumescent seals and associated ironmongery should have achieved 30 or 60 minutes integrity as required and, where applicable, insulation when tested by a UKAS approved laboratory (or assessed by Exova Warringtonfire) to BS 476: Part 22: 1987 or EN 1634-1:2000.

The critical aspects of the doorset construction are considered to be the material of the door frame, the leaf to frame clearance gaps and the lipping material. Attention should be paid to these details and these should not be amended from that previously fire tested. Where this information is not known the following minimum specification will be followed:

- a) Door frame density - 500 kg/m³ (30 minutes) / 650 kg/m³ (60 minutes)
- b) Leaf to frame clearance gaps not to exceed 2.5 mm average and 3 mm maximum,
- c) Lipping density - 500 kg/m³ (30 minutes) / 650 kg/m³ (60 minutes)
- d) Door leaf thickness – 44 mm minimum (30 minutes) / 54 mm minimum (60 minutes)
- e) The door leaf must incorporate non-combustible sub-facing boards

Additionally, the amount of interruption to the intumescent seal specification at the door leaf to frame perimeter clearance gaps should be replicated or reduced from that originally specified for the tested doorset and the lock forend, strike and case must all be wrapped in 2 mm of intumescent sheet material e.g. Interdens.

If the proposed doorset is to be used in double-leaf configurations, the test or assessment must relate to this configuration.

Other entirely surface mounted hardware such as bolts and door chains are also included in the 'Eclipse Security Range' and since these items do not require and cutting into or removal of material from the doorset, they would not be expected to have any deleterious effects upon the performance of previously tested timber or steel based doorsets.

Additionally steel hinges similar to those already discussed in the 'Eclipse Hinge Range' section are also included within the 'Eclipse Security Range' and these hinges may also be positively appraised on the same basis (see 'Eclipse Hinge Range' section for suitable door types).

A full list of the positively appraised Eclipse Security Range items is included within the Annex to this report.

Eurotek Range

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.

In terms of the Eurotek Range, it is not however necessary to consider the

implications of installing a specific lock, within a specific fire door construction, since only the lever handle furniture and other surface mounted items are included within the range. The suitability of the door leaf and latch/lock should be demonstrated by separate test/assessment evidence.

All of the proposed lever handles, thumb turns etc. are entirely surface mounted and therefore do not require any associated cutting of apertures or removal of material 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.

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

- The doorset must have provided the required 20, 30, 60, 120 or 240 minute integrity performance when tested at a UKAS accredited laboratory in accordance with BS 476: Part 22: 1987 or EN 1634-1: 2000, be assessed for the required period by Exova Warringtonfire 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 Exova Warringtonfire/approved by CERTIFIRE to be suited to including the lock/latch for the required period. Alternatively the lock/latch may be detailed in a Exova Warringtonfire assessment or CERTIFIRE approval to be suitable for use with the proposed door for the required period.

Other items within the Eurotek Range, which on the same principle of being surface mounted, may be used with previously proven doorsets are pull handles, finger/kick plates, bolts, signage, knobs, hooks and pulls. The doors that these items may be applied to shall meet the specifications already described above.

Additionally in the case of back to back pull handles with through fixings, it is essential that the holes through timber doorset are not drilled oversize and that the through fixings are bedded onto intumescent mastic. In the case of steel doors which incorporate a core material, welded steel sleeves must be provided for the through fixings.

The Eurotek Range letter plates and flush pulls are not covered by this assessment.

A full list of the positively appraised Eurotek Range items is included within the Annex to this report.

Kaleidoscope Range

The Kaleidoscope range is essentially similar to the Aerotek and Eurotek ranges already discussed but with Nylon based colour coatings and therefore may be positively appraised on the same basis for use with timber based doorsets. These items may not however be used with steel based doorsets due to the additional risk of ignition of the Nylon coatings.

A full list of the positively appraised Kaleidoscope Range items is included within the Annex to this report.

Panic Hardware

The exit devices included within the Panic Hardware range are identical to those already discussed within the 'Door Closer Range' section of this report and therefore have already been positively appraised.

A full list of the positively appraised Panic Hardware items is included within the Annex to this report.

Accessories

The proposed items within the Accessories range are surface mounted and comprise finger/kick plates, bolts, signage, knobs, hooks and pulls. Since these items do not require and cutting into or removal of material from the doorset, they would not be expected to have any deleterious effects upon the performance of previously tested timber or steel based doorsets.

A full list of the positively appraised Accessories items is included within the Annex to this report.

Conclusions

Previously fire tested (or assessed by Exova Warringtonfire) doorsets which have achieved 20, 30, 60, 120 or 240 minutes integrity in accordance with BS 476: Part 22: 1987 or BS EN 1634-1: 2000, as discussed in this report, may be fitted with Frisco door furniture as detailed in Annex A, without detracting from the overall integrity performance of the doorset (and insulation where relevant).

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 Frisco (UK) Sales Ltd 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, 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.

Declaration by Frisco (UK) Sales 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 Exova Warringtonfire to withdraw the assessment.

Signed:

For and on behalf of:

Signatories


Responsible Officer
D. Forshaw* - Principal Certification Engineer


Approved
A Kearns* - Technical Manager

* For and on behalf of Exova Warringtonfire.

Report Issued: 8 th February 2008
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Issue 2: Additions to the Eclipse hinge range. (13th June 2008)

Issue 3: Addition of 14101, 14102 & 14103 mild steel hinges and inclusion of steel doorset scope of use for hinges. (20th August 2013)

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

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Annex A

Aerotek Range

Aerotek Design Lever Handles				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Lausanne	34542	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 6 of this report
Stealth	34543			
Luna	34544			
Axis	34545			
Uni	34546			
Crest	34547			
Jet	34548			
Metro	34549			
Lotus	34550			
Titan	34551			
Ace	34552			
Tempo	34553			
Micro	34554			
Modular	34555			
Matrix	34556			
Eclipse Lever Handles				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Safety	34406 34407 34524 34525	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 6 of this report
Arched	34404 34405			
Mitred	34408 34409			
Safety	34434 34433 34440 34530 34439 34531			

Eclipse Lever Handles				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Straight	34435 34436 34437 34438	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 6 of this report
Mitred	34417 34418			
Arched	34514 34515			
Disabled	34695 34696			
Safety Lever On Plate				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Safety Lever	34680 34681 34682 34683	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 6 of this report
Concealed Fix Escutcheons				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Standard Key Way Escutcheon	34489 34411 34497 34401	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 6 of this report
Oval Cut Out Escutcheon	34452 34410 34457 34403			
Europrofile Escutcheon	34447 34412 34456 34402			
Blank Escutcheon	34575 34576			

Thumbturns				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Thumbturn & Indicating Release	34454 34420 34458 34423	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 6 of this report
Thumbturn & Release Non Indicating	34509 34523			
Disabled Thumbturn & Indicating Release	34432 34431 34415 34416			
Cylinder Door Pulls				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Circular Cylinder Door Pull	34426 34427	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 6 of this report
Standard Keyway Cylinder Door Pull	34480 34483			
Euro Profile Cylinder Door Pull	34482 34485			
Oval Cut Out Cylinder Door Pull	34481 34484			

Pull Handles				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Solid Section D Shaped Bolt Through Pull Handles	34518 34519 34520 34441 34532 34442 34443 34534 34678 34430 34508 34469 34470 34490 34492 34465 34535 34466 34536 34567 34537 34679 34468 34471 34472 34491 34493	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 6 of this report
Roses to Suit Solid Section Pull Handles	34521 34444 34540 34504 34506 34507 34503 34541 34505 34507			
Solid Section D Shaped Back to Back Pull Handles	34461 34460 34459 34419 34475 34476 34464 34463 34462 34473 34474			

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Hollow Section D Shaped Bolt Through Pull Handles	34635 to 34656 34671	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 6 of this report
Roses to Suit Solid Section Pull Handles	34697 to 34702			
Solid Section Arched Pull Handles	34516 to 34517			
Tubular Section Mitred Pull Handles	34672 to 34677			
Tubular Section Guardsman Bolt Through Pull Handles	34657 to 34670			
Dual Curve Pull Handle	34557 to 34558			
Radius Pull Handle	34559 to 34560			
90 Degree Pull Handle	34561 to 34562			
180 Degree Pull Handle	34563 to 34564			

Signage, Bolts & Misc.				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Signage	34450 34500 34451 34501 34455 34502 34686 34692 34687 34693 34688 34694 34486 34498 34487 34499 34685 34691	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 6 of this report
Finger Plates	34495 34428 34496 34429			
Indicating Bolt	34569 34570			
Sprung Security Bolt	34572			
Coat Hooks	34448 34424 34414 34413 34449 34425			

Architectural Lever Range

Architectural Lever Handles				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Alpha	25244 25245 25246 31270 to 31274	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 7 of this report
Ascot	25229 25230 25231			
Barcelona	25238 25239 25240 37238 37239 37240			
Cadenza	25697 to 25703 31697 to 31703 37697 to 37703			
Cezanne & Rembrandt	25661 to 25664 25668 31799 to 31803 37288 37290 37291 37292			

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Chromax & Mirage Softline	25310 to 25315 31800 31806 31807 31808 37800 37806 37807 37808	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 7 of this report
Cosmo	37311 to 37314			
Electra	25274 25275 25276 25279 31279 to 31284 37297 to 37302			
Geneva	25232 25233 25234			
Georgian Monet HFS Lever Suite	25551 to 25556			
Georgian Contract Lever Suite	20006 20007 20009 20035			
Georgian Lever on Shaped Plate	20036 20037 20040 25559 25558			
Henley	25223 25224 25225			

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Inca	25270 to 25273 31275 to 31278 31266 31267 31268 37293 to 37296 37361 37362 37363			
Linea	25280 25281 25281 31285 to 31288 31255 to 31258 37303 to 37306 37353 37354 37355	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 7 of this report
Madrid	25247 25248 25249 31260 to 31264			
Mirage Contemporary	25687 25688 25689 31687 31688 31689			

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Picasso Scroll HFS Suite	25671 to 25675 31315 to 31318 37315 to 37318	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 7 of this report
Scroll Contract Lever Suite	21205 21206 21239 21221			
Scroll Lever on Rose	21100 31805 37805			
Serie 710	25284 25285 25287 31289 to 31295 37307 to 37360			
Stella	63013 to 63016 63001 to 63004 63007 to 63010			
Valencia	25235 25236 25237			
Victorian Contract Lever Suite	21203 21204 21220 21229			
Victorian Lever on Rose	21104			

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Windsor	25226 25227 25228	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 7 of this report
Georgian Lever on Rose	20004			
Ball Knob Set	25221			
Oval Knob Set	25220 31220			
Rim Knob Set	25222 31222			
Georgian Knob Set	20005			
Victorian Knob Set	21107 21108 31826			

Black Antique Range

Black Antique Range Lever Handles				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Fleur-de-Lys Suite	47280 47300 47310	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 8 of this report
Wessex Suite	47240 47260 47270			
Georgian Suite	47230 47235 47236			
Saxon Suite	47430 47440 47450			
Tudor Suite	47460 47470 47480			
Warwick Suite	47500 47510 47520			
Winchester Suite	47530 47531 47532			
Canterbury Suite	47540 47541 47542			
Mortice Knobs	47315 47316 47317			

Misc. items				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Bathroom Indicator	47405	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 8 of this report
Centre door Knob	47320			
Cylinder Pull	47100			
Scroll Style Bolt	47370 47372			
Straight Bolt	47366 47368			
Necked Bolt	47374 47375			
Curly Tail Straight Bolt	47376 47377			
Curly Tail Necked Bolt	47378 47379			
Door Chain	47390			
Escutcheons	47330 47340 47342			
Finger Plate	47485			
Numerals	47200 to 47209			
Mortice Lock	47556	Up to 60 minutes	NA	Suitable doorset specifications are described on Page 9 of this report
Pull Handles	47184 47186 47190 47180 47182 47188	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 8 of this report

Designer Lever Range

Designer Lever Range Lever Handles				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
813	60028 60128 60328 60528	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 10 of this report
823	60019 60119 60319			
933	60020 60120			
Ala	61001 61101			
Alina	60046 60146 60346			
Alonza	25705 31705 37705			
Antalya	25708 31708 37708			
Apollo	60003 60103 60303			
Apriti	60143 60343			
Arielle	60045 60145 60745 60345			
Cadenza	25703 31703 37703			
Corina	60147			
Cosmo	31707			

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Cossima	25691 31691 37691	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 10 of this report
Ely	60042 60542 60742 60342			
Euro	60025 60125 60325			
Fenice	60012 60112 60312			
Gaia	-			
Galassia	61002 61102 61202			
Grand	60601			
Halley	60625			
Ibis	60011 60111 60311			
Ixia	60021 60121			
Laguna	60005 60105 60305			
Lara	60033 60133 60333			
Lola	60032 60132 60332			
Massima	60044 60144 60344 60744			

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Modulo L	60015 60115 60315	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 10 of this report
Modulo S	60018 60118 60318			
Ofelia	61003 61103 61203			
Opera 2	60007 60107 60307			
Pavone	60013 60113 60313			
Ponza	31750			
Porsche	60030 60130 60330			
Riva	60031 60131 60331			
Roxia	60029 60129 60329			
Sidone	60041 60341			
Siena	31751			
Sinai	60602			
Sirena	60039 60139			
Soft	60009 60109 60309			

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Soft Plus	60048 60648	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 10 of this report
Star	60004 60104			
Starlight	31752			
Studio H	60002 60102 60302			
Tiziana	60001 60101			
Uovo	60017 60117 60317			
Venere	60008 60108 60308			
Stella	63017 63005 63011			

Architectural Door Closer Range				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
70 Series	-	Up to 60 minutes	Up to 240 minutes	The doorset must have achieved the required integrity period when tested by a UKAS approved laboratory (or assessed by warringtonfire) to BS 476: Part 22: 1987 or EN 1634-1:2000. Closers may only be mounted in Std/Projecting Arm configuration and may only be fitted to the fire hazard side of steel doors
93 Series	-			
900 Series	-			
600 Series	-			
Multiflex	-			
Concealed Door Closer	17971 17951 17977 17952	Up to 60 minutes	NA	Suitable doorset specifications are described on Page 11 of this report
Spring Hinges	14890 14891 14910 to 14915			
Door Selector	28934	Up to 60 minutes	Up to 240 minutes	The doorset must have achieved the required integrity period when tested by a UKAS approved laboratory (or assessed by warringtonfire) to BS 476: Part 22: 1987 or EN 1634-1:2000.
Single Panic Bolt	28294			
Rebated Double Door Panic Bolt	28285			
Mortice Latch Actuator	28305			
Single Panic Latch	28296			
Push Pad Latch	28297			

Eclipse Hinge Range

Name	Code	Integrity with timber doors	Additional Information
Ball Bearing Hinges	14858 14860 PK858 PK860 14854 14853 PK854 PK853 14882 PK882 14841 14869 14872 14875 to 14878 to 14935	Up to 60 minutes	Suitable doorset specifications are described on Page 12 of this report
4 Ball Bearing Hinges	14861		
Radius Corner Ball Bearing Butt Hinges	14869 14872 14879 14801 14802		
Ball Bearing Butt Hinges	14883 14884		
Security Butt Hinges	14866 14867 14902		
Spring Hinges	14890 14891 14910 to 14915		
Washed Hinges	14856 14848 14886		

Eclipse Hinge Range (continued)

Name	Code	Integrity with timber doors	Additional Information
Ball Bearing Hinges	14101 14102 14103 14851 14852 14885 14916 14917 14918	Up to 30 minutes	Suitable doorset specifications are described on Page 12 of this report
Washed Hinges	14908 14909 14958		

Name	Code	Integrity with steel doors	Additional Information
Ball Bearing Hinges	14858 14860 PK858 PK860 14854 14853 PK854 PK853 14882 PK882 14841 14869 14872	Up to 240 minutes	Suitable doorset specifications are described on Page 13 of this report
4 Ball Bearing Hinges	14861		
Radius Corner Ball Bearing Butt Hinges	14869 14872 14879		
Ball Bearing Butt Hinges	14883 14884		
Security Butt Hinges	14866		

Eclipse Security Range

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
EZ-R 3 Lever Mortice Sashlocks	70010 to 70013	Up to 60 minutes	NA	Suitable doorset specifications are described on Page 13 of this report
EZ-R 5 Lever Mortice Sashlocks	70040 to 70043			
EZ-R Euro Profile Mortice Sashlocks	70092 to 70095			
EZ-R 3 Lever Mortice Deadlocks	70014 to 70017			
EZ-R 5 Lever Mortice Deadlocks	70044 to 70047			
EZ-R Euro Profile Mortice Deadlocks	70096 to 70099			
EZ-R 5 Pin Single Euro Profile Cylinders	70150 to 70150			
EZ-R 5 Pin Double Euro Profile Cylinders	70160 to 70168			
EZ-R 5 Pin Euro Profile Cylinder & Turns	70169 to 70177			

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
EZ-R 3 Lever Mortice Sashlocks Radiused Forend	70024 to 70026	Up to 60 minutes	NA	Suitable doorset specifications are described on Page 13 of this report
EZ-R 3 Lever Mortice Deadlocks Radiused Forend	70028 to 70031			
EZ-R Bathroom Locks Radiused Forend	70032 to 70035			
EZ-R Bathroom Locks Square Forend	70018 to 70021			
EZ-R Tubular Mortice Latch	70270 to 70277			
EZ-R Mortice Flat Latch	70290 to 70293			

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Straight Barrel Bolts	11115 11120 11125 11130 11140 11160 11164 11166 11168 11170 11174 11176 11178 11180 11182 11315 11320 11325 11330 11340 11360 11374 11376 11378 11380 11364 11366 11368 11370 13520 13525 13530 13540 13560 13594 13596 13598 13599	Up to 60 minutes	Up to 240 minutes	<p>The doorset must have achieved the required integrity period when tested by a UKAS approved laboratory (or assessed by warringtonfire) to BS 476: Part 22: 1987 or EN 1634-1:2000.</p>

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Necked Barrel Bolts	11220 11225 11230 11240 11260 11194 11196 11198 11184 11186 11188 11420 11425 11430 11440 11460 11474 11476 11478 11464 11466 11468 13570 13580 13590 13593 13595 13597	Up to 60 minutes	Up to 240 minutes	The doorset must have achieved the required integrity period when tested by a UKAS approved laboratory (or assessed by warringtonfire) to BS 476: Part 22: 1987 or EN 1634-1:2000.
Security Door Chains	17970 17975			
EZ-R DDA Thumb Turns for Euro Profile Cylinders	70178 70179 70180			
Stainless Steel Security Butt Hinge	14866 14867 14902	Up to 60 minutes	NA	Suitable doorset specifications are described on Page 12 of this report

Eurotek Aluminium Range

Eurotek Aluminium Lever Range				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
1000 Series	50054 50055 50056	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 14 of this report
2000 Series	39913 to 39918			
3000 Series	39919 to 39924			
4000 Series	50046 to 50049			
5000 Series	50034 to 50041			
6000 Series	50050 to 50053			
Black End Cap Suite	32008 32009 32010			
Eurotek Suite	39901 to 39905			
Excell Suite	50001 to 50008 50020 to 50027			
Excell Contract Suite	32404 32405 32406			

Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Micro	34554	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 14 of this report
Modular	34555			
Matrix	34556			
Pull Handles				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Solid Section D Shaped Bolt Through Pull Handles	32433 32437 32429 32430 32431 39925 39926 50014 50015 50016 50029 50032	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 14 of this report
Solid Section D Shaped Concealed Fix Pull Handles	32441 32442 32443 50017 50018 50019 50030 50033			
Solid Section D Shaped Back to Back Pull Handles	39927 39928 50011 50012 50013 50028 50031			
Oval Grip Pull Handles	32407 32408			
Bow Handle	32414			

Cylinder Pulls Thumbturns & Escutcheons				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Circular Cylinder Door Pulls	32409	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 14 of this report
Cylinder Door Pulls	32444 32445 32446			
Eurotek Escutcheon	39906 39907 39908			
Excell Escutcheon	32418 32419 32420 50042 to 50045			
Eurotek Thumbturn & Release	39909			
Excell Thumbturn & Release	32425 32458			
Finger Plates & Signage				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Finger Plates	32423 32450	Up to 60 minutes	Up to 240 minutes	Suitable doorset specifications are described on Page 14 of this report
Signage	32034 to 32038			

Kaleidoscope Nylon Range

Lever Handles				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Safety Lever on Plate	74290 to 74361	Up to 60 minutes	NA	Suitable timber doorset specifications are described on Page 6 of this report
Safety Lever on Rose	74001 to 74018			
Disabled Thumbturn & Release	74055 to 74072			
Escutcheons	74019 to 74054			
Pull Handles				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
D Shaped Pull Handles	74109 to 74126	Up to 60 minutes	NA	Suitable timber doorset specifications are described on Page 6 of this report
Cranked Pull Handles	74127 to 74144			
Hinges				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Ral Coloured Ball Bearing Butt Hinges	14916 to 14921	Up to 60 minutes	NA	Suitable timber doorset specifications are described on Page 6 of this report

Architectural Panic Hardware Range

Architectural Panic Hardware Range				
Name	Code	Integrity with timber doors	Integrity with steel doors	Additional Information
Single Panic Bolt	28294	Up to 60 minutes	Up to 240 minutes	The doorset must have achieved the required integrity period when tested by a UKAS approved laboratory (or assessed by warringtonfire) to BS 476: Part 22: 1987 or EN 1634-1:2000.
Rebated Double Door Panic Bolt	28285			
Mortice Latch Actuator	28305			
Single Panic Latch	28296			
Push Pad Latch	28297			