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EWFA Test Report No. DHAR 41221_closer.3 Page 1 of 3

Test Sponsors	Issue Date	Revision Date
GEZE GmbH Reinhold-Vöster-Straße 21-29 71229 Leonberg, Germany and Pyropanel Developments Pty Ltd. Melba Industrial Park, 122-124 Beresford Road Lilydale, VIC 3140, Australia	06/02/06	01/09/11
	Validity Date	
	28/02/16	

The Fire Resistance Performance of Pyropanel Doorsets with nominated variation to door closer

Variations Considered in this Report

Fitting the following door closers (overhead rack and pinion with guide rail or with link arm) in lieu of the door closer in the referenced tests.

Model	Outside dimensions of closer body Width x height x depth (mm)
GEZE TS 5000 (guide rail)	287mm x 60mm x 46mm
GEZE TS 4000* (link arm)	287mm x 60mm x 46mm
GEZE TS 3000* (guide rail)	226mm x 60mm x 46mm
GEZE TS 1500* (guide rail)	177mm x 50mm x 39mm

* Refer discussion for validation of additional closers to that tested.




Referenced Test Reports

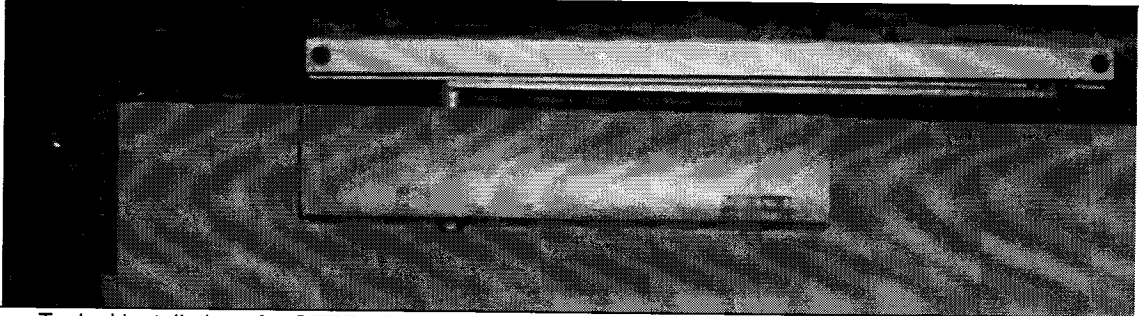
Test Report	Doorset Description	Test Standard
FR 3262	Single Leaf Pyropanel Doorset nominally 38mm thick	AS 1530.4- 1997
FR 1618	Single Leaf Pyropanel Doorset nominally 48mm thick	AS 1530.4- 1990
FR 1645	Two Leaf Pyropanel Doorset nominally 48mm thick	AS 1530.4- 1990

Additional Supporting Data

Test Report	Doorset Description	Test Duration	Test Standard
WFRA 41221	Single Leaf Pyropanel Doorset nominally 38mm thick	121 minutes	AS 1530.4-2005

A pilot fire resistance test in accordance with Appendix B11 of AS 1530.4 2005 was conducted on a representative section of a doorset on 11th January 2006. It included a GEZE TS 5000 Overhead rack and pinion door closer with guide rail fitted to the door leaf. The closer did not initiate failure of the pilot doorset during the 121 minute fire resistance test, and continued to remain in place at the conclusion of the fire resistance test.

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Authorisation	Prepared By:	Revised by:	Reviewed By:
	 A. F. Rayner	 M Kamal	 K. G. Nicholls

Hardware Description	
Product name(s) and manufacturer:	GEZE TS 5000 Overhead rack and pinion door closer with guide rail. Manufacturer details held on confidential file.
Method of fixing of closer to door leaf	Metal screws engaging steel plates within door leaf construction
Maximum opening/ closing moment of closer	34Nm/ 22Nm
	
<p>Typical installation of a GEZE TS 5000 Overhead rack and pinion door closer with guide rail on the unexposed side of the door leaf</p>	

Discussion

The method of installation of the proposed closer is comparable to the tested closers in FR 3262, FR 1618 and FR 1645.

The issues associated with substitution of the tested door closers with the proposed door closer is ignition of the door leaf due to the leakage of oil from the closer onto the door leaf.

It is expected if a proposed closer does not initiate failure of the pilot doorset before the failure occurred on the reference doorsets, that substitution of the proposed closer with the one tested on the reference doorsets will not be detrimental to the performance of the reference doorset.

Results from Pilot scale test WFRA 41221 confirmed this expectation and the closer is positively assessed for the proposed period.

The additional door closers (TS 4000, 3000 and TS 1500) – as stated by GEZE – are manufactured from the same materials, use the same internal operating mechanism (overhead rack and pinion), are of equal or smaller size, are mounted in a similar position (with respect to distance away from hinge stile – not to be less than 110mm) as per the tested closer TS 5000. With respect to the difference between the arm mechanisms of the TS 4000 and TS 5000 this variance is unlikely to be detrimental to the performance of the reference doorset because it only differs in the manner in which the force is applied.

Therefore these additional closers are positively assessed for the proposed period.

Conclusions

On the basis of the above discussion it is the opinion of this laboratory that the doorsets listed below would be likely to achieve the FRL listed below if they are fitted with a GEZE TS 1500, TS 3000, TS 4000 or TS 5000 Overhead rack and pinion door closer with guide rail (with link arm for the TS 4000) on the door leaf as described in this assessment report.

This assessment has been prepared in accordance with section 4.2 of AS 1905.1: 2005 and is conditional upon the operational characteristics and materials of the doorset and closer complying with Section 2 of AS 1905.1: 2005. The field of application of the proposed closer is defined by the field of application of the doorset the closer is installed upon.

Test Ref	Description	FRL
FR 3262	Single Leaf Pyropanel Doorset nominally 38mm thick	-/120/30
FR 1618	Single Leaf Pyropanel Doorset nominally 48mm thick	-/120/90
FR 1645	Two Leaf Pyropanel Doorset nominally 48mm thick	-/120/90

Conditions/Validity

The conclusions of this assessment may be used to directly assess the fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all conditions.

Because of the nature of fire resistance testing, and the consequent difficulty in quantifying the uncertainty of measurement, it is not possible to provide a stated degree of accuracy. The inherent variability in test procedures, materials and methods of construction, and installation may lead to variations in performance between elements of similar construction.

The assessment can therefore only relate only to the actual prototype test specimens, testing conditions, and methodology described in the supporting data, and does not imply any performance abilities of constructions of subsequent manufacture.

This assessment is based on information and experience available at the time of preparation. The published procedures for the conduct of tests and the assessment of test results are the subject of constant review and improvement and it is recommended that this report be reviewed by validity date by Exova Warringtonfire Aus Pty. Ltd.

The information contained in this report shall not be used for the assessment of variations other than those stated in the conclusions above. The assessment is valid provided no modifications are made to the systems detailed in this report. All details of construction should be consistent with the requirements stated in the relevant test reports and all referenced documents.



Sponsors

GEZE GmbH
Reinhold Voester Strasse 21-29.
71229 Leonberg, GERMANY
and
Trafalgar Building Products,
42 Lisbon Street, Villawood,
NSW 2163, AUSTRALIA

The Fire Resistance Performance of E-core Doorsets
with nominated variation to the door closer.

Variations considered in this opinion

Fitting the following door Closers (overhead rack and pinion with guide rail or with link arm) in lieu of the door closers tested in the referenced tests.

Model	Outside dimensions of closer body Width x height x depth (mm)
GEZE TS 5000 (guide rail)	287mm x 60mm x 46mm
GEZE TS 4000* (link arm)	287mm x 60mm x 46mm
GEZE TS 3000* (guide rail)	226mm x 60mm x 46mm
GEZE TS 1500* (guide rail)	177mm x 50mm x 39mm

* Refer discussion for validation of additional closers to that tested.

Reference Test Reports



This assessment report considers a variation to the following tested doorsets.

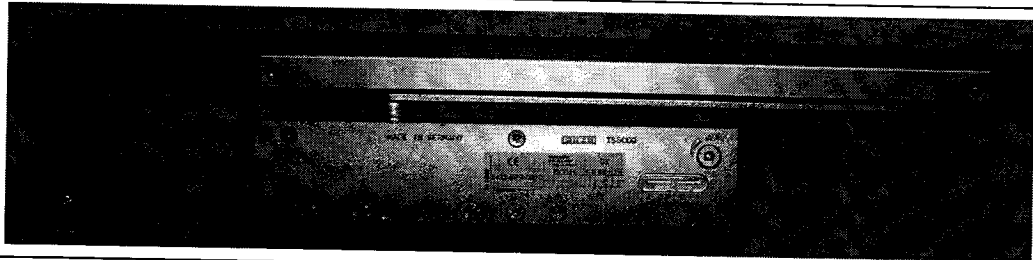
Test Report	Doorset Description	FRL	Test Standard
FSV 0609	Single Leaf Plywood faced E-core Doorset nominally 45mm thick	-/120/30	AS 1530.4-1990
SI 2271	Two Leaf Plywood faced E-core Doorset nominally 45mm thick	-/120/30	AS 1530.4-1990
FSV 0608	Single Leaf Plywood faced E-core doorset nominally 35mm thick	-/120/30	AS 1530.4-1990

Additional Supporting Data

Test Report	Doorset Description	Test Duration	Test Standard
WFRA 41218	Single Leaf Trafalgar E-core Doorset nominally 35mm thick.	121 minutes	AS 1530.4-2005

A pilot fire resistance test in accordance with Appendix B11 of AS 1530.4 2005 was conducted on a representative section of a doorset on 24th October 2005. It included a GEZE TS 5000 Overhead rack and pinion door closer with guide rail fitted to the door leaf. The closer did not initiate failure of the pilot doorset during the 121 minute fire resistance test, and continued to remain in place at the conclusion of the fire resistance test.

REGISTERED TESTING AUTHORITY	Warrington Fire Research (Aust) Pty Ltd		
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Phone / Fax	61 (0)3 9767 1066 / 61 (0)3 9767 1001		
ABN	81 050 241 524		
Email / Home Page	testing@wfra.com.au / www.wfra.com.au		
Authorisation	Prepared By:  A. F. Rayner	Reviewed By:  K.G. Nicholls	

Hardware Description	
Product name(s) and manufacturer:	GEZE TS 5000 Overhead rack and pinion door closer with guide rail – GEZE GmbH Ltd
Method of fixing of closer to door leaf	Metal screws engaging steel plates within door leaf construction
Maximum opening / closing moment of closer	28Nm / 17Nm
	
<p><i>Typical installation of a GEZE TS 5000 Overhead rack and pinion door closer with guide rail on the unexposed side of the door leaf.</i></p>	

Discussion


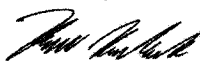
The method of installation of the proposed closer is comparable to the tested closers in FSV 0608, FSV 0609 and SI 2271.

The issues associated with substitution of the tested door closers with the proposed door closer is ignition of the door leaf due to the leakage of oil from the closer onto the door leaf.

It is expected if a proposed closer does not initiate failure of the pilot doorset before the failure occurred on the reference doorsets, that substitution of the proposed closer with the one tested on the reference doorsets will not be detrimental to the performance of the reference doorset.

Results from Pilot scale test WFRA 41218 confirmed this expectation and the closer is positively assessed for the proposed period.

The additional door closers (TS 4000, 3000 and TS 1500) – as stated by GEZE – are manufactured from the same materials, use the same internal operating mechanism (overhead rack and pinion), are of equal or smaller size, are mounted in a similar position (with respect to distance away from hinge stile – not to be less than 110mm) as per the tested closer TS 5000. With respect to the difference between the arm mechanisms of the TS 4000 and TS 5000 this variance is unlikely to be detrimental to the performance of the reference doorset because it only differs in the manner in which the force is applied. Therefore these additional closers are positively assessed for the proposed period.

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Authorisation	Prepared By:  A. F. Rayner	Reviewed By:  K.G. Nicholls

Conclusions

On the basis of the above discussion it is the opinion of this laboratory that the doorsets listed below would be likely to achieve the FRL listed below if they are fitted with a GEZE TS 1500, TS 3000, TS 4000 or TS 5000 Overhead rack and pinion door closer with guide rail (with link arm for the TS 4000) on the door leaf as described in this assessment report.

This assessment has been prepared in accordance with section 4.2 of AS 1905.1:2005 and is conditional upon the operational characteristics and materials of the doorset and closer complying with Section 2 of AS 1905.1:2005. The field of application of the proposed closer is defined by the field of application of the doorset the closer is installed upon.

Test Ref	Description	FRL
FSV 0609	Single Leaf Plywood faced E-core Fire Doorset nominally 45mm thick	-/120/30
SI 2271	Two Leaf Plywood faced E-core Fire Doorset nominally 45mm thick	-/120/30
FSV 0608	Single Leaf Plywood faced E-core Fire Doorset nominally 35mm thick	-/120/30

Conditions/Validity



This assessment report does not provide an endorsement by Warrington Fire Research (Aust) Pty Ltd of the actual products supplied.

The conclusions of this assessment may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all conditions. The test method requires only one sample to be tested and it should be noted that there are inherent variability's in the test procedure, materials and methods of construction and installation that may lead to variations in performance between doorsets of similar construction.

This assessment is formulated on the basis of information and experience available at the time of preparation. The published procedures for the conduct of tests and the appraisal of test results are the subject of constant review and improvement and it is recommended that the information provided in this report is reviewed by 28th February 2011 by Warrington Fire Research (Aust) Pty Ltd.

The information contained in this report must not be used for the assessment of variations other than those stated in the conclusions above.

This assessment is valid provided no modifications are made to the systems or formulations detailed in this report. All details of construction should be consistent with the requirements stated in this report and all referenced documents.

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71229 Leonberg, GERMANY

and

Pyropanel Developments Pty Ltd.
Melba Industrial Park
122-124 Beresford Road
Lilydale, VIC 3140, AUSTRALIA

**The Fire Resistance Performance of Pyropanel Doorsets
with nominated variation to the door closer.**

Variations considered in this opinion

Fitting a GEZE TS 5000 Overhead rack and pinion door closer with guide rail in lieu of the door closers tested in the referenced tests.

Reference Test Reports

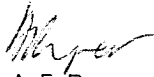
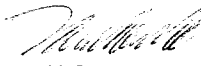
This assessment report considers a variation to the following tested doorsets.

Test Report	Doorset Description	FRL	Test Standard
FR 3262	Single Leaf Pyropanel Doorset nominally 38mm thick.	-/120/30	AS 1530.4-1997
FR 1618	Single Leaf Pyropanel Doorset nominally 48mm thick.	-/120/90	AS 1530.4-1990
FR 1645	Two Leaf Pyropanel Doorset nominally 48mm thick.	-/120/90	AS 1530.4-1990

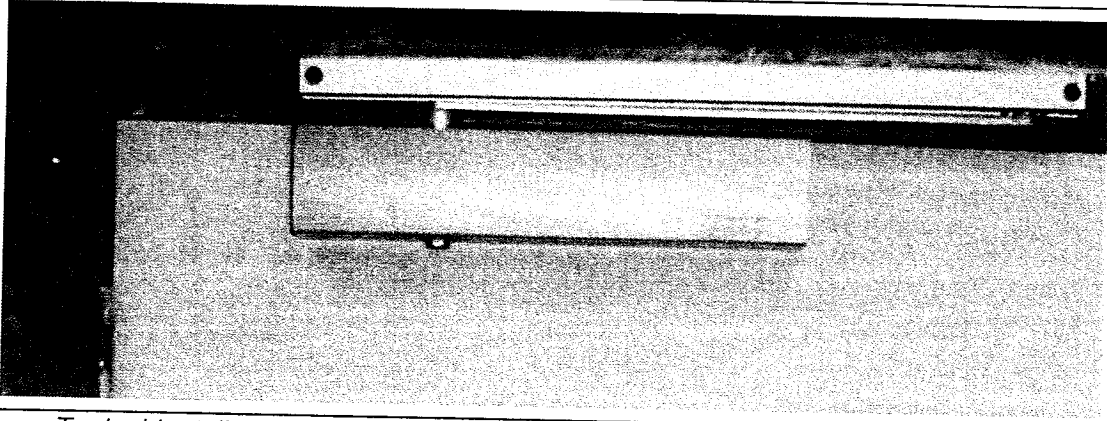
Additional Supporting Data

Test Report	Doorset Description	Test Duration	Test Standard
WFRA 41221	Single Leaf Pyropanel Doorset nominally 38mm thick	121 minutes	AS 1530.4-2005

A pilot fire resistance test in accordance with Appendix B11 of AS 1530.4 2005 was conducted on a representative section of a doorset on 11th January 2006. It included a GEZE TS 5000 Overhead rack and pinion door closer with guide rail fitted to the door leaf. The closer did not initiate failure of the pilot doorset during the 121 minute fire resistance test, and continued to remain in place at the conclusion of the fire resistance test.

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Authorisation	Prepared By:	Reviewed By:	
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Hardware Description	
Product name(s) and manufacturer:	GEZE TS 5000 Overhead rack and pinion door closer with guide rail – GEZE GmbH Ltd
Method of fixing of closer to door leaf	Metal screws engaging steel plates within door leaf construction
Maximum opening / closing moment of closer	34Nm / 22Nm



Typical installation of a GEZE TS 5000 Overhead rack and pinion door closer with guide rail on the unexposed side of the door leaf.



Discussion

The method of installation of the proposed closer is comparable to the tested closers in FR 3262, FR 1618 and FR 1645.

The issues associated with substitution of the tested door closers with the proposed door closer is ignition of the door leaf due to the leakage of oil from the closer onto the door leaf.

It is expected if a proposed closer does not initiate failure of the pilot doorset before the failure occurred on the reference doorsets, that substitution of the proposed closer with the one tested on the reference doorsets will not be detrimental to the performance of the reference doorset.

Results from Pilot scale test WFRA 41221 confirmed this expectation and the closer is positively assessed for the proposed period.

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Authorisation	Prepared By:  A. F. Rayner	Reviewed By:  K.G. Nicholls

Conclusions

On the basis of the above discussion it is the opinion of this laboratory that the doorsets listed below would be likely to achieve the FRL listed below if they are fitted with a GEZE TS 5000 Overhead rack and pinion door closer with guide rail on the door leaf as described in this assessment report.

This assessment has been prepared in accordance with section 4.2 of AS 1905.1:2005 and is conditional upon the operational characteristics and materials of the doorset and closer complying with Section 2 of AS 1905.1:2005. The field of application of the proposed closer is defined by the field of application of the doorset the closer is installed upon.

Test Ref	Description	FRL
FR 3262	Single Leaf Pyropanel Doorset nominally 38mm thick.	-/120/30
FR 1618	Single Leaf Pyropanel Doorset nominally 48mm thick.	-/120/90
FR 1645	Two Leaf Pyropanel Doorset nominally 48mm thick.	-/120/90

Conditions/Validity

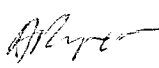

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This assessment is formulated on the basis of information and experience available at the time of preparation. The published procedures for the conduct of tests and the appraisal of test results are the subject of constant review and improvement and it is recommended that the information provided in this report is reviewed by 28th February 2011 by Warrington Fire Research (Aust) Pty Ltd.

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