COMMERCIAL-IN-CONFIDENCE

Resolute
Testing Laboratories

Assessment Report – Fire

SUBJECT:	Assessment of the Fendix Slimline Retrofit Collar in Horizontal Concrete Barriers
REPORT NUMBER:	**RTL FA 2981.03**
REPORT DATE:	09/09/2026
EXPIRY DATE	30/07/2031

Sponsor:

Fendix Pty Ltd

1. Document History

Version	Date	Written By	Reviewed By	Authorised By	Additional Information
01	15/07/2026	R. Biviano	C. Schoenmaker	R. Biviano	Initial Release
02	19/08/2026	R. Biviano	C. Schoenmaker	R. Biviano	Clarification around screed. Addition of Variation 5
03	09/09/2026	R. Biviano	C. Schoenmaker	R. Biviano	Clarification around washer size. Addition of capped pipes

2. Facility Name and Address

Resolute Testing Laboratories Pty Ltd

ABN 26 610 548 733

Units 18 & 19, 31-79 Paisley Drive

Lawnton, QLD 4501

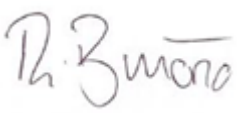
Tel: 1300 664 698

Email: info@resolutelabs.com.au

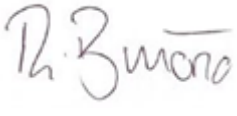
NATA Accredited Testing Laboratory

Accreditation Number: 20089
Corporate Site Number: 24654

3. Report Authorisation

Written By	Title	Date	Signature
R. Biviano	Test and Assessment Engineer	09/09/2026	

Reviewed By	Title	Date	Signature
C. Schoenmaker	Laboratory Business Manager	09/09/2026	

Authorised By	Title	Date	Signature
R. Biviano	Test and Assessment Engineer	09/09/2026	

4. Executive Summary

This report presents Resolute's assessment of the expected fire resistance level (FRL) of the Fendix Slimline Retrofit Collar when used to treat PVC DWV pipes.

This report has been prepared to address the variations to the tested systems outlined in section 7. Based on the analysis presented in this report, it is the opinion of this NATA accredited testing laboratory that Fendix Slimline Retrofit Collar would achieve the FRL's listed in Table 1 if tested in accordance with AS1530.4:2014 subject to the requirements, assumptions and limitations outlined in sections 10 and 11

Table 1 outlines a summary of the FRLs by pipe and barrier size. Table 2 outlines the anchoring requirements for all configurations. Table 3 and Table 4 outline the specific installation parameters for stack and floor waste configurations.

This report is valid until 30/07/2031.

Table 1 - Assessment outcome for the Fendix Slimline Retrofit Collar

PVC DWV Pipe Size	Pipe Configuration[1]	Concrete[2] Thickness	
		150 mm	170 mm
50 mm	Stack / Floor Waste / with or without fitting	-/180/180	-/180/180
65 mm	Stack / Floor Waste / with or without fitting	-/180/180	-/180/180
80 mm	Stack / Floor Waste / with or without fitting	-/180/180	-/180/180
100 mm	Stack / Floor Waste / with or without fitting	-/180/180	-/240/240

Table 2 – Concrete Anchor Requirements

Pipe Configuration	Concrete Anchor Requirements
All Configurations	Minimum 4 x M6 fixings to be used with the following requirements: • Minimum M6 diameter. • Minimum effective embedment of 42 mm or an actual length of 50 mm. • All steel. Galvanized or Zinc coatings are permitted. • The anchor may be a wedge, sleeve or screw style. • Washer diameter to be a minimum 14 mm (external), unless the head of the anchor is greater than, or equal to 14 mm. • 'Knock in' anchors are permitted only if they are a wedge style anchor and meet the above length and diameter requirements.

[1] Pipes can be installed with or without a socket / fitting.
[2] Concrete thickness does not include the use of screed, mortar or non-shrink grout. **NB**. The use of screed is optional and is not a requirement of the assessed system.

Table 3 – Stack Pipe Installation Parameters

Pipe Configuration	Allowable Installation Parameters
Stack Pipe in Core Hole	Annular gap of between 2 mm and 10 mm to be filled with acrylic fire rated sealant[3] to a minimum depth of 10 mm. The pipe is not required to be centered within the opening provided the above annular gap is achieved. Pipe can be installed with or without fitting.
Stack Pipe Installed Over Cast-in Collar	Cast-in collar can be functional, non-functional or of unknown function. Acrylic fire rated sealant must be applied from the top side of the concrete slab to the full annular gap between the concrete slab and the pipe to a depth of at least 10 mm. If there is no direct interface between the pipe and the concrete slab due to the presence of a cast-in collar, then sealant must be applied to the gap between the pipe and the cast-in collar and then topped with a 10 mm fillet of sealant. Pipe can be installed with or without fitting.

Table 4 – Floor Waste Installation Parameters

Pipe Configuration	Allowable Installation Parameters
Floor Waste in Core Hole	Maximum unexposed side annular gap to be 10 mm. Unexposed side may be topped with screed (if required). Any shower grate or floor waste kit may be used. Pipe can be installed with or without fitting / four-way riser / s-bend etc
Floor Waste Installed Over Cast-in Collar	Cast-in collar can be functional, non-functional or of unknown function. Maximum unexposed side annular gap to be 10 mm. Unexposed side may be topped with screed (if required). Any shower grate or floor waste kit may be used. Pipe can be installed with or without fitting / four-way riser / s-bend etc

[3] Acrylic fire rated sealant must be tested to AS1530.4:2014 for a minimum of two hours with either of the following.

- a control joint test, of a joint no smaller than 10 mm in width or
- as an annular gap sealant for any pipe penetration.

Note. Sikasil Kitchen and Bathroom sealant is also permitted for up to four hours.

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5. INTRODUCTION

This report gives Resolute's assessment of the expected fire resistance level (FRL) of the Fendix Slimline Retrofit Collar, in accordance with AS1530.4:2014 and AS4072.1:2005 Amdt 1.

The Fendix Slimline Retrofit Collar is a steel frame, slimline spring-loaded intumescent device. It is constructed from 1.3 mm thick powder coated steel housing with one layer of 5 mm intumescent material. Four fixing tabs are included as part of the Fendix Slimline Retrofit Collar. When sufficient heat is applied, a restraining device melts allowing the spring to activate releasing the intumescent which sits on a metal plate. This action seals the devices opening, allowing the intumescent to expand. Table 5 outlines the dimensions of the Fendix Slimline Retrofit Collar housing and intumescent. Figure 1 and Figure 2 illustrate the Fendix Slimline Retrofit Collar both with and without a pipe.

Table 5 - Dimensions of the Fendix Slimline Retrofit Collar

DIMENSIONS	WIDTH	LENGTH	DEPTH / THICKNESS
Housing	175 mm	390 mm	20 mm
Intumescent	165 mm	145 mm	5 mm

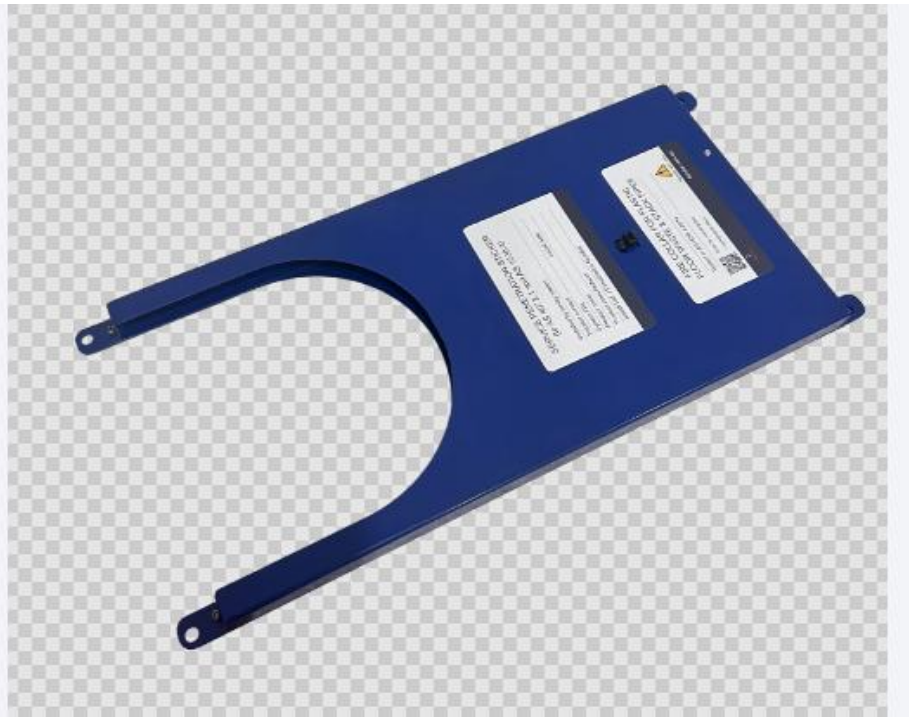

Figure 1 - Fendix Slimline Retrofit Collar

Figure 2 - Fendix Slimline Retrofit Collar with Pipe

5.1. Compliance with the National Construction Code

This report is issued as an assessment report from an accredited testing laboratory to satisfy the Evidence of Suitability requirements under Clause A5G3(1)(d) of the National Construction Code (NCC) 2022 and 2025, Volume One and Volume Two. The baseline test evidence upon which this assessment is based complies with the requirements of Clause S1C2(b) of the NCC, and the variations considered within this report are assessed in accordance with the principles of Clause S1C2(c). This assessment may also be used to satisfy the relevant Evidence of Suitability provisions of earlier editions of the NCC.

6. SUPPORTING DATA

The measurements leading to the results presented in this report have been undertaken in accordance with standards which specify a method for measuring the fire-resistance of building elements:

- AS 1530.4:2014 Methods for fire tests on building materials, components, and structures, Part 4: Fire-resistance tests for elements of construction

Table 6 lists the test evidence from which this report was based. A summary of the supporting evidence is included in Appendix A.

Table 6 –Reference test data

REPORT REFERENCE	TEST DATE	TEST STANDARD	ISSUING AUTHORITY
PF25111	01/12/2025	AS1530.4:2014	FTSL – Passive Fire Inspection and Test Services Ltd
PF25098	01/12/2025	AS1530.4:2014	FTSL – Passive Fire Inspection and Test Services Ltd
PF26005	07/05/2026	AS1530.4:2014	FTSL – Passive Fire Inspection and Test Services Ltd

7. VARIATIONS TO TESTED SYSTEMS

Based on the test evidence listed in Table 6 it is proposed to assess the Fendix Slimline Retrofit Collar considering the following variations to the test system.

Variation 1 – Types and diameter of pipes

- PVC-DWV pipe sizes between 50 mm and 100 mm
- Floor waste kits
- Location of any pipe fittings, socket or elbows
- Allowance of capped pipes

Variation 2 – Functional and non-functional cast in collars

- The installation under various cast-in collars both functional, non-functional and unknown function.

Variation 3 – FRL when used in thicker slabs than tested

- Allocation of an FRL, to that tested when installed into thicker concrete slabs in accordance with AS3600.

Variation 4 – Specifying fire rated sealant (where required) and concrete anchors

- Allowance for any tested acrylic fire-rated sealant of equal or greater FRL.
- Allowance for different concrete anchors

Variation 5 – Location of specimens within the reference tests.

8. ANALYSIS

8.1. General.

The variations to the tested system considered in this report are outlined in section 7. This section of the report provides the relevant detailed technical discussions. Table 7 outlines the test configurations and results for the three tests conducted, referenced throughout this document. Additional details are in Appendix A. All tests were conducted with the same size Fendix Slimline Retrofit Collar.

Table 7 - Summary of Test Configurations.

TEST	SPECIMEN	SERVICE (MM)	CONFIGURATION	FITTING / PIPE	ADDITIONAL FIRESTOPPING	INTEGRITY	INSULATION
PF25111	1	100 PVC DWV	Floor Waste	Pipe	Nil	124 NF	124 NF
	2	100 PVC DWV	Stack	Fitting	Nil	124 NF	124 NF
PF25098	2	50 PVC DWV	Floor Waste	Fitting	Functional Cast-in collar	243 NF	243 NF
	3	100 PVC DWV	Floor Waste	Fitting	Functional Cast-in collar	243 NF	243 NF
	4	100 PVC DWV	Stack	Fitting	Nil	243 NF	243 NF
	5	50 PVC DWV	Stack	Fitting	Nil	243 NF	243 NF
	6	50 PVC DWV	Floor Waste	Fitting	Functional Cast-in collar	243 NF	243 NF
PF26005	2	100 PVC DWV	Floor Waste	Fitting	Nonfunctional Cast-in collar	241 NF	241 NF
	3	56 HDPE	Stack	Pipe	Nil	241 NF	241 NF
	5	50 PVC DWV	Floor Waste	Fitting	Nil	215	180
	6	100 PVC DWV	Floor Waste	Fitting	Functional Cast-in collar	241 NF	241 NF

Table 7notes

- NF indicates no failure at the conclusion of the test.
- This document refers only to PVC DWV pipes. The inclusion of HDPE test results is informative only.

8.2. Variation 1 – Types and diameter of pipes

Test PF25111 tested a 100 mm PVC DWV pipe in both floor waste and stack configurations. Both specimens achieve no insulation or integrity failure for the full 124-minute test duration. Test PF26005 tested a 50 mm PVC DWV pipe in a floor waste configuration with an integrity failure at the 215-minute mark of the test, and an insulation failure at the 180th minute. Test PF25098 tested both a 100 mm PVC DWV and 50 mm PVC DWV pipe in a stack configuration for no failure for the full 243 test duration.

During all the above tests, the local firestopping treatment was the same dimension Fendix Slimline Retrofit Collar. As the Fendix Slimline Retrofit Collar has proven itself for nominal pipe sizes of both 100 mm and 50 mm, it is assessed to allow for intermediate pipe sizes of 65 mm and 80 mm to be used in the same size collar, limited to the performance of the lowest rated 50 mm PVC DWV pipe (180 minutes integrity and insulation).

It is generally established that a Floor Waste configuration is more onerous than a stack pipe configuration, this is due to the non-fire side having an exposed grate with thermocouples typically fitted to that exposed grate, allowing a quicker temperature rise before the fire stopping device is able to activate. Additionally, a stack pipe acts as a chimney which in turn allows temperatures to remain lower compared to a floor waste application. Once the fire stopping device has fully activated, the differences between the two configurations is minimal. This is illustrated from an insulation perspective from direct comparison of temperatures achieved by both specimens in PF25111. The initial temperature spike within the first ten minutes was higher for the floor waste application, with a maximum temperature of just over 140 °C compared to a maximum stack pipe

temperature at this same time of approximately 45 °C. At the end of the two-hour test duration both pipes recorded a similar maximum of 60 to 65 °C.

During tests PF25111, PF25098 and PF26005 the 100 mm PVC DWV pipes were tested in a number of configurations including where there was an elbow or fitting on the pipe, with that elbow/fitting being at a location in which the Fendix Slimline Retrofit Collar would be required to activate on the elbow/fitting. During the 100 mm test configurations there was no specimen in which an integrity or insulation failure occurred before the end of the test. As such, it is assessed to allow for pipe fittings to be installed for both floor waste and stack configurations for a 100 mm PVC DWV penetration, limited to -/240/240. For pipes smaller than 100 mm, the lowest tested pipe performance will apply (-/180/180). It is proposed to extend this to any pipe fitting, socket, four-way riser, dry floor waste kits etc provided that the size of the pipe + fitting passing through the Fendix Slimline Retrofit Collar is within the limits of approved pipe sizes within this document.

All floor waste testing was conducted with a metal floor waste grate. The use of a metal floor grate requires a thermocouple to be placed on the top side of the grate with no shielding of furnace gas. As such it is deemed that the installation of other varieties of floor grates would present a similar, or less onerous case. Examples of other grates outside of those tested include those where a closed tile insert is used and other metal floor grates.

Service end condition

For plastic pipe penetrations, AS1530.4:2014 requires the pipe end conditions of the unexposed side be uncapped, with the exposed side requiring a cap (capped / uncapped). In situations where the unexposed (top side) of a pipe is capped, the lack of flow through the pipe provides a less onerous condition compared to that of a capped / uncapped pipe. Using the principles outlined in EN 1366-3 where capped / uncapped testing is allowed to be used for capped / capped conditions in relation to plastic pipes, it is allowed to have the Fendix Slimline Retrofit Collar installed in situations where the unexposed (top side) of a pipe is capped, subject to the limitations within this report.

8.3. Variation 2 – Functional and non-functional cast in collars

Table 8 presents a summary of the tests in which a Fendix Slimline Retrofit Collar was installed under a previously installed cast-in collar. In some instances, the cast-in collar was fully functional, whereas in others the cast-in collar was disassembled. As outlined in section 8.2, the Fendix Slimline Retrofit Collar has been tested as a floor waste and stack pipe with the Fendix Slimline Retrofit Collar being the sole fire stopping item. The addition of a cast-in collar above the main fire stopping that is the Fendix Slimline Retrofit Collar is unlikely to have a notable effect on the performance of the penetration. This is confirmed throughout all five specimens in which this was tested where the FRL of the test specimen, with a floor waste pipe passing through a cast in collar was recorded as no failure for the full four-hour test duration. This result was achieved in both cases of a functional, or nonfunctional collar across two separate brands of cast in collar. As such it is assessed to allow the Fendix Slimline Retrofit Collar to be installed under a previously installed cast-in collar regardless of the state of that previously installed cast-in collar. If the cast-in collar, or any part of the cast in collar such as metal rings, a portion of the plastic housing or a portion of intumescent s is wider than the Fendix Slimline Retrofit Collar, then the installation of the Fendix Slimline Retrofit Collar is still permitted, provided the Fendix Slimline Retrofit Collar opening to be nominally central to the pipe.

Table 8 - Cast-in Collar Summary

Test	Specimen	Service (mm)	Configuration	Fitting / Pipe	Additional FireStopping	Integrity	Insulation
PF25098	2	50 PVC DWV	Floor Waste	Fitting	Functional Cast-in collar	243	243
	3	100 PVC DWV	Floor Waste	Fitting	Functional Cast-in collar	243	243
	6	50 PVC DWV	Floor Waste	Fitting	Functional Cast-in collar	243	243

PF26005	2	100 PVC DWV	Floor Waste	Fitting	Nonfunctional Cast-in collar	241	241
	6	100 PVC DWV	Floor Waste	Fitting	Functional Cast-in collar	241	241

Based on the discussion presented in section 8.2, it is proposed to extend the allowance of a previously installed cast-in collar also to stack pipes and for intermediate pipe sizes provided that the intermediate pipe size passing through a cast-in collar (either functional or nonfunctional) is designed for the same size pipe as that passing through it. This is to limit the annular gap between the pipe and the collar. The maximum FRL allowable for a 100 mm PVC DWV stack pipe is -/240/240. The maximum FRL for PVC DWV stack pipes is between 50 mm and 85 mm -/180/180. This maximum FRL is determined on the FRL achieved of the 50 mm PVC DWV stack pipe.

For stack pipes, sealant must be applied from the top side of the concrete slab to the full annular gap between the concrete slab and the pipe to a depth of at least 10 mm. If there is no direct interface between the pipe and the concrete slab due to the presence of a cast-in collar, then sealant must be applied to the gap between the pipe and the cast-in collar, and then topped with a 10 mm fillet of sealant. The fillet of sealant is specified as an additional layer of protection for the penetration and should account for any unpredicted movement between the slab and the cast-in collar.

8.4. Variation 3 – FRL when used in thicker slabs than tested

Tests PF25111, PF25098 and PF26005 were conducted in 150 mm thick slabs. Under AS3600 slabs of this thickness are limited to a fire-resistance period in terms of insulation of 180 minutes. As all except one test specimen were able to achieve insulation performance in excess of 180 minutes, it is proposed to extend the FRL performance of the specimens to that of an element thicker than tested. The slab must meet AS3600 requirements including having a minimum effective thickness of 170 mm in order for the full four-hour performance to be applied.

The above variation does not apply to pipes less than 100 mm in diameter, as their performance is governed by the most conservative test configuration as outlined within Variation 1 – Types and diameter of pipes of 180 minutes.

8.4.1. The use of screed

The test descriptions of the floor waste specimens detail the use of 30 mm of screed, however the images of the specimens during the test show no screed applied higher than the slab. Based on the characteristics of screed, it is allowed to install floor waste collars with screed provided the concrete thickness of the slab itself is not thinner than tested, or as outlined within this document. Additionally, mortar or non-shrink grout can be used in lieu of screed provided the concrete thickness fulfills the requirements of this document.

8.5. Variation 4 – Specifying fire rated sealant (where required) and concrete anchors

Test PF25111 had the gap between the concrete and stack pipe of Specimen A filled with HB Fuller Firesound sealant to a depth of 10 mm, measured from the top of the unexposed side. Test PF25098 used Sikasil Kitchen and Bathroom sealant to the same 10 mm depth as PF25111. It is of note that Sikasil Kitchen and Bathroom sealant is a non-fire rated product. Across all these specimens as detailed earlier in this report, the penetrations recorded no failure for the full test duration. In penetrations such as this, the sealant applied to the annular gap between the top of the pipe assists the fire performance until the fire collar is able to close. Thus, it is deemed that the specific type of sealant used on the non-exposed side is not as critical in respect to the test results.

To act as a layer of conservatism, it is deemed that any acrylic based fire rated sealant can be used in lieu of the tested sealants, to a minimum depth of 10 mm, installed from the non-exposed side. This requirement is more stringent compared to the tested Sikasil Kitchen and Bathroom sealant and allows for a wide variety of fire-rated acrylic sealants available in the market.

The acrylic fire rated sealant used must be tested to AS1530.4:2014 for a minimum of two hours, with that testing comprised of a horizontal concrete floor test of either:

- a control joint test, of a joint no smaller than 10 mm in width or
- as an annular gap sealant for any pipe penetration.

Sealant depths of greater than 10 mm can be used. It is suggested that backing rod of any variety be used to assist setting the depth on the sealant. Sikasil Kitchen and Bathroom sealant is also permitted for up to four hours.

During the referenced tests multiple annular gaps were tested with the smallest annular gap being 2.5 mm, and the largest 10.5 mm. As there was no recorded failure correlated to the size of the annular gap, it is proposed to allow annular gaps between 2 mm and 10 mm for all stack pipes. Additionally, the pipe is not required to be centred within the opening, provided the annular gap requirements are met.

Tests PF25111 and PF25098 were conducted with 4 x M6 x 50 mm hex head concrete screws, fixed through four provided fixing tabs of the Fendix Slimline Retrofit Collar. Test PF26005 used the same fixing tabs and method, but used an alternate brand hex head concrete screws measuring 1/4" x 1-3/4". Due to the fixing thickness, all tests had an effective nominal embedment length of approximately 42 mm.

The function of the concrete anchors is to ensure that the Fendix Slimline Retrofit Collar is securely fastened to the concrete soffit and continues to be securely fastened for the length of the test. Based on the performance of the test specimens throughout the referenced tests, and after consulting the post-test photos provided within the references test reports, it is assumed that the concrete anchors were able to adequately restrain the Fendix Slimline Retrofit Collar to the supporting structure. It is deemed that provided the concrete anchor is no smaller than tested, with a nominal embedment of no less than tested, that the effect on the fire resistance performance of the Fendix Slimline Retrofit Collar will be minimal. As such, any concrete anchor may be used subject to the following restrictions:

- Minimum M6 diameter.
- Minimum effective embedment of 42 mm or an actual length of 50 mm.
- All steel. Galvanized or Zinc coatings are permitted.
- The anchor may be a wedge, sleeve or screw style.
- Washer external diameter to be a minimum 14 mm unless the head of the anchor is equal to or greater than 14 mm. The internal diameter of any washer is to be suitable to the size of the anchor.
- 'Knock in' anchors are permitted only if they are a wedge style anchor and meet the above length and diameter requirements.

8.6. Variation 5 – Location of specimens within the reference tests.

This assessment is based on the test evidence as outlined within Appendix A. It is noted that some specimens may be installed closer than allowed within clause 2.9.6 of AS1530.4:2014. Although this laboratory is unable to confirm the actual distance between specimens, the potential of the specimens being too close has been taken into consideration for all the above assessed variations. It is the opinion of this laboratory that if the specimens were located too near to each other, in some circumstances that this would create a more onerous condition due to shielding, or, in other circumstances sufficient additional test evidence exists to show that the close proximity of specimens is unlikely to reduce the performance of that specimen.

9. Conclusion

Based on the discussion presented in this report, it is the opinion of this NATA accredited testing laboratory that if the tested prototypes summarised in section 6, had been varied in accordance with section 7, they would have likely achieved the following fire-resistance levels, if tested in accordance with AS 1530.4:2014 subject to the requirements of section 10 and limitations of section 11.

Table 9 presents the fire resistance level of the Fendix Slimline Retrofit Collar

Table 9 –Fire-resistance level performance

PVC DWV Pipe Size	Pipe Configuration	FRL	
		Concrete Thickness[i]	
		150 mm	170 mm
50 mm	Stack / Floor Waste / with or without fitting	-/180/180	-/180/180
65 mm	Stack / Floor Waste / with or without fitting	-/180/180	-/180/180
80 mm	Stack / Floor Waste / with or without fitting	-/180/180	-/180/180
100 mm	Stack / Floor Waste / with or without fitting	-/180/180	-/240/240

[i] Concrete thickness does not include the use of screed, mortar or non-shrink grout. NB. The use of screed is not required.

10. REQUIREMENTS

This report details the methods of construction, test conditions and assessed results that would have been expected had the specific elements of construction described herein been tested in accordance with AS 1530.4:2014 and AS4072.1:2005 Amdt. 1

Any further variations with respect to size, construction details, loads, stresses, edge, or end conditions, other than those identified in this report, may invalidate the conclusions drawn in this report.

Any changes with respect to any components of the system can have a significant effect on the performance of the system as a whole and are not covered by this assessment.

This report is only valid for the Fendix Slimline Retrofit Collar when exposed to AS1530.4:2014 fire conditions from the bottom side only.

11. LIMITATIONS

11.1. General

This report may only be reproduced in full without modifications by the report Sponsor. Copies, extracts, or abridgements of this report in any form shall not be published by other organisations or individuals without the express written permission of Resolute Testing Laboratories Pty Ltd.

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

Because of the nature of fire 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.

This assessment report does not provide an endorsement by Resolute of the actual products supplied to the industry. The referenced assessment can therefore only relate to the actual prototype test specimens, testing conditions and methodology described in the supporting data, and does not imply any performance abilities of subsequent construction.

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. It is therefore recommended that this report is reviewed on, or before, the stated validity terms.

The information contained in this assessment 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.

11.2. Sponsor Undertakings

By using this report as evidence of compliance or performance, the Sponsor confirms that:

- To their knowledge the component or element of structure, which is the subject of this assessment, has not been subjected to a fire test to the Standard against which this assessment is being made, and
- They agree to withdraw this assessment from circulation should the component or element of construction be the subject of a fire test by a test authority in accordance with the Standard against which this assessment is being made and the results are not in agreement with this assessment, and

- They are not aware of any information that could adversely affect the conclusions of this assessment and if they subsequently become aware of any such information, agree to ask the assessing authority to withdraw the assessment.

12. VALIDITY

This assessment report will lapse on the 30/07/2031. Should you wish us to re-examine this report with a view to the possible extension of its term of validity, would you please apply to us two to three months before the date of expiry. Resolute reserves the right at any time to amend or withdraw this assessment in the light of new knowledge.

Appendix A – Summary of Supporting Data

A.1 Test Report – PF25111

A.1.1 Test Laboratory:

FTSL Fire Testing Laboratory

A.1.2 Test Sponsor

Fendix

A.1.3 Report Date

11/02/2026

A.1.4 Variations to Test Method

Nil reported

A.1.5 General Description of Tested Specimen

Specimen 1 and 2 comprised of a Fendix collar device secured around PVC DWV pipes.

Specimen 1 treated a shower waste kit and 100 mm PVC DWV pipe, with an aperture size of 119.5 mm. The Fendix collar was secured into the concrete using 4 x M6 x 50 mm concrete screws. A metal shower grate was installed onto the unexposed side. The specimen description details 30 mm of screed, however the test images show the specimen finishing nominally flush with the top side of the slab.

Specimen 2 treated a 100 mm PVC DWV stack pipe, with the Fendix collar installed at the location of the Elbow to pipe bend. The aperture size was 118.4 mm. 4 x M6 x 50 mm concrete screws were used to secure the Fendix collar to the concrete slab. 10 mm of HB fuller Firesound sealant was installed to the annular gap between the concrete and the pipe, finishing flush with the unexposed face of the separating element. The pipe was not centred within the aperture, with annular gaps ranging from 2.8 mm to 4.6 mm.

Specimen 3 was an unreported specimen.

A.1.6 Test Results

Table 10 outlines the test results for PF25111. The total test was terminated at 124 minutes with no reported integrity or insulation failures.

Table 10 - PF25111 Test Results

Specimen	Service	Configuration	Actual Integrity (mins)	Actual Insulation (mins)
1	Shower Waste kit and 100 mm PVC DWV pipe	Floor Waste	124	124
2	100 mm PVC DWV pipe with fitting	Stack	124	124

A.2 TEST REPORT – PF25098

A.2.1 Test Laboratory:

FTSL Fire Testing Laboratory

A.2.2 Test Sponsor

Fendix

A.2.3 Report Date

21/05/2026

A.2.4 Variations to Test Method

Nil reported

A.2.5 General Description of Tested Specimen

Specimen 2,3,4,5 and 6 are comprised of a Fendix collar device secured around PVC DWV pipes.

Specimen 2 treated a shower waste kit and 50 mm PVC DWV pipe, with an aperture size of 95 mm. The Fendix collar was secured into the concrete using 4 x M6 x 50 mm concrete hex screws and located such that the Fendix collar was over the PVC DWV socket. The specimen description details 30 mm of screed, however the test images show the specimen finishing nominally flush with the top side of the slab. A metal shower grate was installed onto the unexposed side.Installed through the concrete was a 65 mm cast in collar from a different manufacturer (Manufacturer A). The cast in collar was fully functional and installed as per the manufactures instructions.

Specimen 3 treated a shower waste kit and 100 mm PVC DWV pipe, with an aperture size of 135 mm. The Fendix collar was secured into the concrete using 4 x M6 x 50 mm concrete hex screws and located such that the Fendix collar was over the PVC DWV socket. A metal shower grate was installed onto the unexposed side. The specimen description details 30 mm of screed, however the test images show the specimen finishing nominally flush with the top side of the slab. . Installed through the concrete was a 100 mm cast in collar from a different manufacturer (Manufacturer A). The cast in collar was fully functional and installed as per the manufacturer's instructions.

Specimen 4 treated a 100 mm PVC DWV stack pipe, with the Fendix collar installed at the location of the Elbow to pipe bend. The aperture size was 134.5 mm. 4 x M6 x 50 mm concrete screws were used to secure the Fendix collar to the concrete slab. 10 mm of Sikasil was installed to the annular gap between the concrete and the pipe, finishing flush with the unexposed face of the separating element. The pipe was not centred within the aperture, with annular gaps ranging from 7.2 mm to 10.5 mm.

Specimen 5 treated a 50 mm PVC DWV stack pipe, with the Fendix collar installed at the location of the Elbow to pipe bend. The aperture size was 66.9mm. 4 x M6 x 50 mm concrete screws were used to secure the Fendix collar to the concrete slab. 10 mm of Sikasil was installed to the annular gap between the concrete and the pipe, finishing flush with the unexposed face of the separating element. The pipe was not centred within the aperture, with annular gaps ranging from 2.5 mm to 3.5 mm.

Specimen 6 treated a shower waste kit and 50 mm PVC DWV pipe, with an aperture size of 63 mm. The Fendix collar was secured into the concrete using 4 x M6 x 50 mm concrete hex screws and located such that the Fendix collar was over the PVC socket. A metal shower grate was installed onto the unexposed. The specimen description details 30 mm of screed, however the test images show the specimen finishing nominally flush with the top side of the slab.. Installed through the concrete was a 50 mm cast in collar from a different manufacturer (Manufacturer B). The cast in collar was fully functional and installed as per the manufacturer's instructions.

Specimen 1 was an unreported specimen.

A.2.6 Test Results

Table 11 outlines the test results for PF25098. The total test was terminated at 243 minutes with no reported integrity or insulation failures.

Table 11 - PF25098 Test Results

Specimen	Service	Configuration	Actual Integrity (mins)	Actual Insulation (Mins)
2	Shower Waste kit and 50 mm PVC DWV pipe	Floor waste with a functional Manufacturer A cast in collar installed	243	243
3	Shower Waste kit and 100 mm PVC DWV pipe	Floor waste with a functional Manufacturer A cast in collar installed	243	243
4	100 mm PVC DWV pipe with fitting	Stack	243	243
5	50 mm PVC DWV pipe with fitting	Stack	243	243
6	Shower Waste kit and 50 mm PVC DWV pipe	Floor waste with a functional Manufacturer B cast in collar installed	243	243

A.3 TEST REPORT – PF26005

A.3.1 Test Laboratory:

FTSL Fire Testing Laboratory

A.3.2 Test Sponsor

Fendix

A.3.3 Report Date

26/05/2026

A.3.4 Variations to Test Method

Nil Reported

A.3.5 General Description of Tested Specimen

Specimen 2,5 and 6 were comprised of a Fendix collar device secured around PVC DWV pipes. Specimen 3 comprised of a HDPE pipe.

Specimen 2 treated a shower waste kit and 100 mm PVC DWV pipe, with an aperture size of 110 mm. The Fendix collar was secured into the concrete using 4 x M6 x 50 mm concrete hex screws and located such that the Fendix collar was over the PVC DWV socket. A metal shower grate was installed onto the unexposed side. The specimen description details 30 mm of screed, however the test images show the specimen finishing nominally flush with the top side of the slab.. Installed through the concrete was a 100 mm cast in collar from a different manufacturer (Manufacturer B). The cast in collar had its fire stopping material removed.

Specimen 3 treated a 56 mm HDPE stack pipe, with the Fendix collar installed at the cross-section of the pipe. The aperture size was 63 mm. 4 x M6 x 50 mm concrete screws were used to secure the Fendix collar to the concrete slab. The pipe was not centred within the aperture, with annular gaps ranging from 0 mm to 6.9 mm.

Specimen 5 treated a shower waste kit and 50 mm PVC DWV pipe, with an aperture size of 66.5 mm. The Fendix collar was secured into the concrete using 4 x M6 x 50 mm concrete hex screws and located such that the Fendix collar was over the PVC DWV socket. A metal shower grate was installed onto the unexposed side. The specimen description details 30 mm of screed, however the test images show the specimen finishing nominally flush with the top side of the slab.

Specimen 6 treated a shower waste kit and 100 mm PVC DWV pipe, with an aperture size of 119 mm. The Fendix collar was secured into the concrete using 4 x M6 x 50 mm concrete hex screws and located such that the Fendix collar was over the PVC DWV socket. A metal shower grate was installed onto the unexposed side. The specimen description details 30 mm of screed, however the test images show the specimen finishing nominally flush with the top side of the slab. i. Installed through the concrete was a 100 mm cast in collar from a different manufacturer (Manufacturer B). The cast in collar was fully functional and installed as per the manufacturer's instructions.

A.3.6 Test Results

Table 12 outlines the test results for PF26005. The test was terminated at 241 minutes.

Table 12 – PF26005 Test Results

Specimen	Service	Configuration	Actual Integrity (mins)	Actual Insulation (Mins)
2	Shower Waste kit and 100 mm PVC DWV pipe	Floor waste with a non-functional Manufacturer B cast in collar installed	241	241
3	56 mm (measured) HPDE pipe	Stack	241	241
5	Shower Waste kit and 50 mm PVC DWV pipe	Floor Waste	215	180
6	Shower Waste kit and 100 mm PVC DWV pipe	Floor waste with a functional Manufacturer B cast in collar installed	241	241