



# Fire assessment report

The fire resistance performance of Hilti Flexible Firestop Foam CFS-F FX / CP 660 protecting cable and cable conduit penetrations in walls and concrete floors

Client: Hilti (Aust.) Pty Ltd and Hilti New Zealand Limited

Report number: 37571100 Reference number: FAS200018 Revision: R2.0

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## Amendment schedule

Version	Date	Information relating to report			
37571100	Issue: 27/10/2015	Reason for issue	Initial issue.		
			Prepared by	Reviewed by	
	Expiry: 31/10/2020	Name	D. Nicholson	K. Nicholls	
37571100.1	Issue: 06/11/2015	Reason for issue	Revised with typographical amendments.		
			Prepared by	Reviewed by	
	Expiry: 31/10/2020	Name	D. Nicholson	K. Nicholls	
37571100.2	Issue: 21/02/2020	Reason for issue	Revised to give applicability to Dintel walls as approved separating elements (limited application). Assessment revalidated in accordance AS 1530.4:2014 and period of validity extend by another five years. Updated to the latest Warringtonfire report template.		
				Prepared by	Reviewed by
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Exova Warringtonfire rebranded to Warringtonfire on 1 December 2018. Apart from the change to our brand name, no other changes have occurred. The introduction of our new brand name does not affect the validity of existing documents previously issued by us.

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## 1. Introduction

This report contains the minimum information sufficient for regulatory compliance in accordance with AS 1530.4:2014 and refers to Assessment reports 37571100 R2.0 and FAS190067B R1.0.

The referenced assessment report 37571100 R2.0 presents an assessment of the fire resistance performance of Hilti Flexible Firestop Foam CFS-F FX protecting cable and cable conduit penetrations in walls and concrete floors if tested in accordance with AS 1530.4:2014 and assessed in accordance with AS 4072.1-2005.

The referenced assessment report FAS190067B R1.0 contains an assessment of the fire resistance performance of various pipe and cable services through a 155mm thick Dintel wall with polymer skins, filled with normal-weight concrete, protected by various Hilti fire protection systems including Firestop block CFS-BL, Firestop plug CFS-PL, intumescent sealant CP 611A, acrylic sealant CP 606 and Hilti Firestop Putty Bandage CFS-P BA, in general accordance with AS 1530.4:2014.

The tested prototypes described in Section 2 of this report, when subject to the proposed variations described in Section 3 and tested in accordance with the referenced test method described in Section 4. The conclusions of the report are summarised in Section 5.

The validity of this assessment is conditional on compliance with Sections 7, 8 and 9 of this report.

Summaries of the test data on which this assessment is based are provided in Appendix A together with a summary of the critical issues leading to the assessment conclusions including the main points of argument.

## 2. Tested prototypes

The referenced assessment report 37571100 R2.0 refers to the test reports Nr. 8828-13, Nr. 8829-13-2, WF 179848, 10308023, 10308025, 07-E-317 and 08-E-079 describing tests on cable and conduit penetrations protected with Hilti Flexible Firestop Foam CFS F-FX penetrating walls and floors tested in accordance with EN 1366-3: 2009. The tests were sponsored by Hilti AG and were conducted by AFITI, Centre for Fire Testing and Research and Efectis France.

Furthermore, the referenced assessment report FAS190067B R1.0 refers to FRT190130 R2.0 which describes a fire resistance test of various pipe and cable services through a 155mm thick Dintel wall with polymer skins, filled with normal-weight concrete, protected by various Hilti fire protection systems including Firestop block CFS-BL, Firestop plug CFS-PL, intumescent sealant CP 611A, acrylic sealant CP 606 and Hilti Firestop Putty Bandage CFS-P BA, in accordance with AS 1530.4:2014. FRT190130 R2.0 was sponsored by Dintel construction system and Hilti Australia Pty Ltd, and the testing was undertaken by Warringtonfire Australia Pty Ltd.

Refer to Appendix A for a full summary of the test data.

## 3. Variations to the tested prototypes

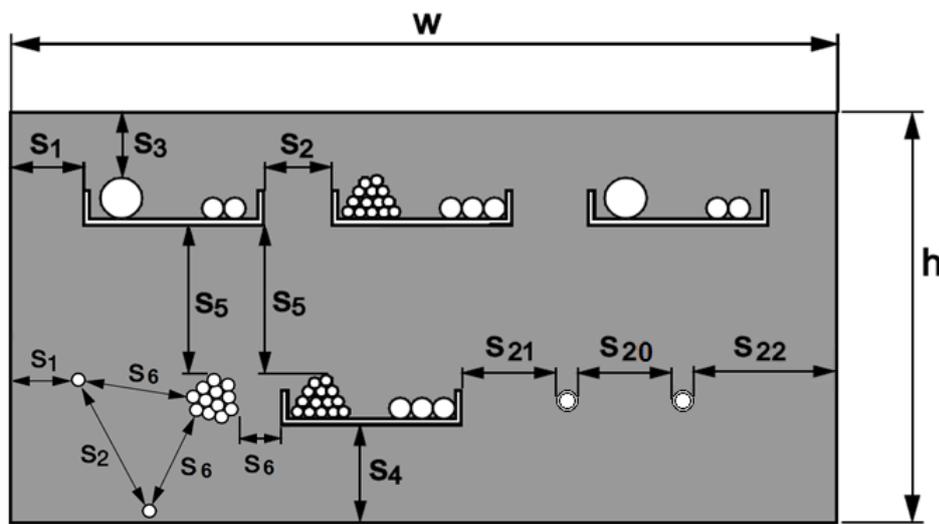
The proposed construction for cable and cable conduit penetrations protected with Hilti Flexible Firestop Foam CFS-F FX in walls and floors shall be as tested in Nr. 8828-13, Nr. 8829-13-2, WF 179848, 10308023, 10308025, 07-E-317 and 08-E-079 subjecting to the following variations:

- Hilti Flexible Firestop Foam CP 660 also has the trade name Hilti Flexible Firestop Foam CFS-F FX
- Thickness of floor slabs reduces to a minimum of 120mm and 13mm or 16mm fire grade plasterboard strips at least 100mm wide are installed around the opening with necessary number of layers to form a frame on the top side of floor if requires.
- For walls the support construction shall optionally be AAC, concrete, solid or hollow masonry wall, Speedpanel wall, Speedwall wall or plasterboard lined wall.
- Minimum 155mm thick Dintel walls, filled with normal-weight concrete, may also be used as the wall separating element, for limited applications only, subject to additional requirements, as described in Table 7.

- The plasterboard lined wall shall comprise of timber or steel studs lined on both faces with a minimum of 2 layers of 13mm or 16mm thick fire grade plasterboard with or without cavity insulation and be otherwise tested or assessed to achieve an FRL of -/120/120 or 120/120/120.
- Consideration given to the performance of standard configuration cables described in AS1530.4 Appendix D.
- Consideration given to the performance of metal and plastic conduits with and without cables or optical fibres.
- Consideration given to the performance when additional Firestop Putty Bandage CFS-P BA is used to protect cable penetrations

Details of the assessed construction is summarised in below for walls and floors is summarised in section 3.1 to 3.3.

**Distance requirements**



**Figure 1** – Distance Requirements of Penetrations

**Table 1** – Distance Requirements

Minimum distance valid for installations of services	Wall (mm)	Floor (mm)
Distance between cables/cable supports and seal edge	s1 = 0	s1 = 0
Distance between cables/cable supports	s2 = 0	s2 = 0
Distance between cables and upper seal edge	s3 = 0	s3 = 0
Distance between cable supports and bottom seal edge	s4 = 0	s4 = 0
Distance between cables and cable support above	s5 = 40	s5 = 40
Distance between cables and cable bundle	s6 = 40	s6 = 40
Distance between single or bundle of conduits and other services or seal edges	s20, 21, 22 = 40	s20, 21, 22, 23 = 40
Maximum % of the seal can be penetrated	60%	60%

**Table 2** – Seal Size

Max W x h ≤ 400mm x 400mm	Seal Size		Seal Thickness
	Area	Ø	t <sub>A</sub>
Wall Penetrations	≤ 0.16m <sup>2</sup>	≤ 400mm	≥ 150mm or ≥ 200mm
Floor Penetrations	≤ 0.16m <sup>2</sup>	≤ 400mm	≥ 150mm or ≥ 200mm

**Aperture Framing/Beading details for walls and floors**

For walls or floors with a thickness of less than the seal depth ( $t_A$ ), an aperture framing or a beading must be used ( $E_1$  or  $E_2$ ).

Aperture framing option 1: The frame shall be installed inside the opening, with the depth being equal to, or greater than, the minimum seal thickness  $t_A$ , perpendicular to the wall surface, made of fire grade plasterboard board at least 13mm or 16mm thick, centred in the wall (figure 2a and 2d).

Beading: Gypsum or calcium silicate board strips at least 50mm wide for wall applications and at least 75mm wide for floor applications ( $w_A$ , figure 2e) are installed around the opening with the necessary number of layers to form a frame on the top side of a floor, or two frames of the same height on both sides of a wall (figure 2b, 2c and 2e). Alternatively, a 75mm thick Hebel panel, from one side only, may be used on 75mm thick walls, to make the seal thickness ( $t_A$ )  $\geq 150$ mm (figure 2f).

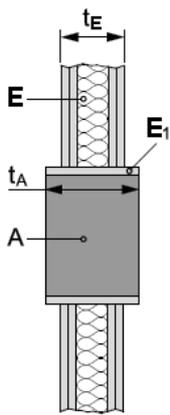


Figure 2a

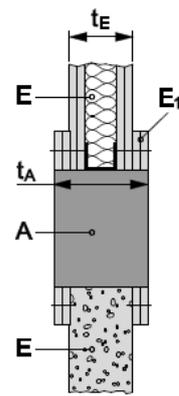


Figure 2b

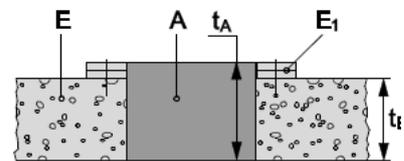


Figure 2c

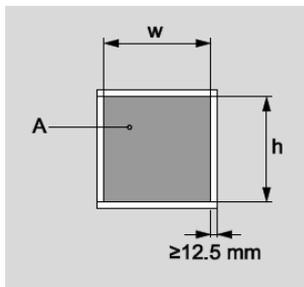


Figure 2d

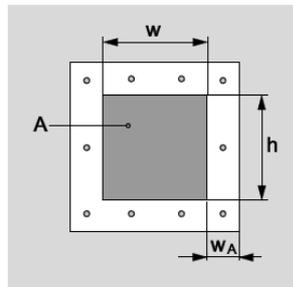


Figure 2e

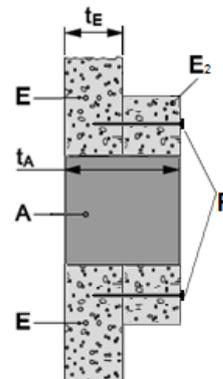


Figure 2f

**Figure 2** – Aperture framing / beading and position of the seal in walls / floors

Item	Description	Item	Description
A	Hilti Flexible Firestop Foam CFS-F FX	$t_E$	Thickness of the building element
E	Building elements wall/floor (rigid or flexible wall construction, with or without cavity insulation)	w	Width of the seal
$E_1$	Aperture beading, 13mm or 16mm fire grade plasterboard.	H	Height of the seal
$E_2$	Aperture beading, 75mm Hebel panel from one side only	F	Fixing for 75mm Hebel Panel beading (14-10 x 100mm type 17 hex head screw)
$t_A$	Thickness of the seal, min. 150mm	$w_A$	Width of the frame

### Single, Multiple or Mixed Penetrations

The wall must be tested or otherwise assessed in accordance with AS 1530.4:2014 for the required fire resistance period. Hilti Flexible Firestop Foam CFS-FX may be used to provide a penetration seal with the following specific services in single or multiple applications as well as in mixed application of these service types (mixed):

- Blank Seal: Maximum opening size is 0.16m<sup>2</sup> (limited to 400mm high) or 400mm in diameter (if seal height is reduced below 400mm, then the length can be more than 400mm, within a total area of 0.16m<sup>2</sup>)
- No more than 60% of the seal area shall be penetrated. Seal thickness ( $t_A$ )  $\geq$  150mm.
- Cables/cable supports
- Conduits
- Mixed (mixed of the above service types)

### Penetrations in walls

#### Flexible wall (E)

The wall must have a minimum thickness of 100 mm ( $t_E$ ) and comprise of timber or steel studs lined on both faces with a minimum of two layers of 13mm or 16 mm thick fire grade plasterboard and be tested or otherwise assessed to achieve an FRL of -/120/120 or 120/120/120 with or without cavity insulation. If the wall is less than the seal depth ( $t_A$ ) build-up shall be applied.

#### Rigid Wall (E)

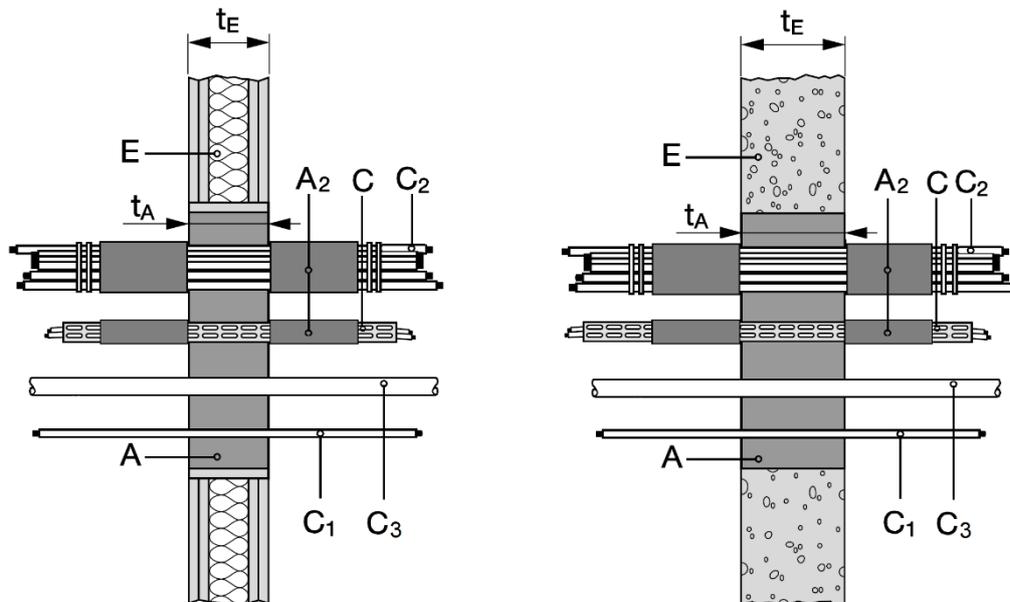
The bare wall must have a minimum thickness of 75 mm and comprise of concrete, aerated concrete, Speedpanel panel, Speedwall panel or solid or hollow masonry with a minimum density of 550 kg/m<sup>3</sup>. If the wall is less than the seal depth ( $t_A$ ) build-up shall be applied.

#### Cable Insulation Protection

Cables may be insulated with Hilti Firestop Putty Bandage CFS-P BA.

#### Cable Support

Cables may be supported in wall applications with perforated steel cable trays on both sides.



**Figure 3** – Individual conduit, cables and cable bundles with or without insulation protection through walls

Item	Description	Item	Description
A	Hilti Flexible Firestop Foam CFS F-FX	C	Service Cables with Cable tray
A <sub>2</sub>	2 layers of 100mm wide Hilti Firestop Putty Bandage CFS-P BA each side	C <sub>1</sub>	Single Cables
t <sub>A</sub>	Thickness of penetration seal	C <sub>2</sub>	Cable Bundle
E	Building elements wall/floor (rigid or flexible wall construction, with or without cavity insulation)	C <sub>3</sub>	Conduit
		t <sub>E</sub>	Thickness of the building element

### Penetrations in rigid floors

#### Rigid floor (E)

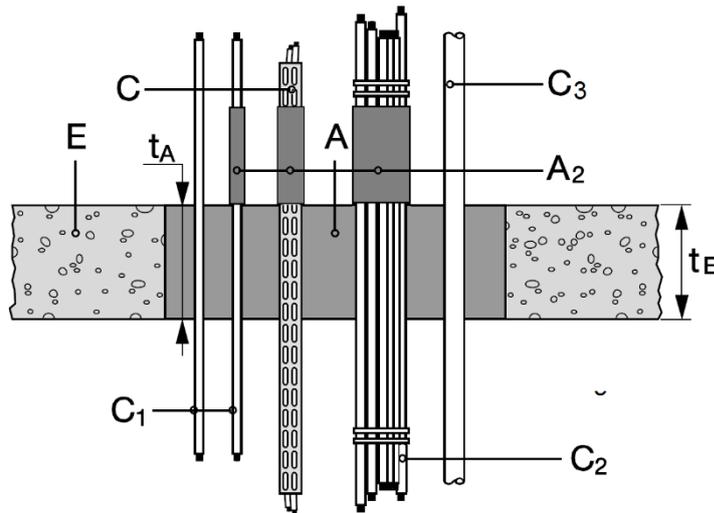
The floor must have a minimum thickness of 120 mm ( $t_E$ ) and comprise of aerated concrete or concrete with a minimum density of 550 kg/m<sup>3</sup>. If the concrete floor is less than the seal depth ( $t_A$ ) build-up shall be applied.

#### Cable Insulation Protection

Cables may be insulated with Hilti Firestop Putty Bandage CFS-P BA on the top side only.

#### Cable Support

Cables may be supported in floor applications with perforated steel cable trays on both sides.



**Figure 4** – Individual conduit, cables and cable bundles with or without insulation protection through floors

Item	Description	Item	Description
A	Hilti Flexible Firestop Foam CFS F-FX	C	Service Cables with Cable tray
A <sub>2</sub>	2 layers of 100mm wide Hilti Firestop Putty Bandage CFS-P BA top side only	C <sub>1</sub>	Single Cables
t <sub>A</sub>	Thickness of penetration seal	C <sub>2</sub>	Cable Bundle
E	Building elements wall/floor (rigid or flexible wall construction, with or without cavity insulation)	C <sub>3</sub>	Conduit
		t <sub>E</sub>	Thickness of the building element

## 4. Referenced test procedures

This report is prepared with reference to the requirements of AS 1530.4:2014 and AS 4072.1-2005.

## 5. Formal assessment summary

Based on the discussion presented in this report, it is the opinion of this testing authority that if the specimen described in section 1 had been modified within the scope of section 3, it will achieve the performance as stated below if tested in accordance with the test method referenced in Section 4 and subject to the requirements of Section 7:

**150mm thick seal in walls and floors**

**Table 3** – Service penetrations, flexible wall, at least 100mm thick (+ aperture beading)

Description of Services	FRL	
<i>Blank Opening</i> (up to a maximum of 400mm x 400mm)	<b>Note: Refer to Section 3.1 and ensure that seal thickness (<math>t_A</math>) <math>\geq</math> 150mm</b>	
Area $\leq$ 0.16m <sup>2</sup> Or Diameter $\leq$ 400mm	-/120/120	
<i>Up to 60% full of Standard Cable Services</i> (up to a maximum of 400mm x 400mm or equivalent area $\leq$ 0.16m <sup>2</sup> )	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>) and Firestop Putty Bandage(A<sub>2</sub>)</i>
PVC insulated Power Cables with or without cable tray (Standard D1 cable set, in accordance with AS 1530.4:2014 Appendix D)	-/120/60	-/120/120
PVC insulated Communication Cables with or without cable tray (Standard D2 cable set, in accordance with AS1530.4-20 Appendix D)		
<i>Single Plastic Conduits and tubes:</i> <i>Rigid and Flexible PO: polyolefin (PE, PP, PPE, PPO); Rigid PVC: polyvinyl chloride</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	
Single Conduit up to 16mm filled with cables, optic fibres or empty	-/120/120	

**Table 4** – Service penetrations, rigid walls, at least 75mm thick (+ aperture beading)

Description of Services	FRL	
<i>Blank Opening</i> (up to a maximum of 400mm x 400mm)	<b>Note: Refer to Section 3.1 and ensure that seal thickness (<math>t_A</math>) <math>\geq</math> 150mm</b>	
Area $\leq$ 0.16m <sup>2</sup> Or Diameter $\leq$ 400mm	-/120/120	
<i>Up to 60% full of Standard Cable Services</i> (up to a maximum of 400mm x 400mm or equivalent area $\leq$ 0.16m <sup>2</sup> )	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>) and Firestop Putty Bandage(A<sub>2</sub>)</i>
PVC insulated Power Cables with or without cable tray (Standard D1 cable set, in accordance with AS 1530.4:2014 Appendix D)	-/120/60	-/120/120
PVC insulated Communication Cables with or without cable tray (Standard D2 cable set, in accordance with AS 1530.4:2014 Appendix D)		
<i>Single Plastic Conduits and tubes:</i> <i>Rigid and Flexible PO: polyolefin (PE, PP, PPE, PPO); Rigid PVC: polyvinyl chloride</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	
Single Conduit up to 16mm filled with cables, optic fibres or empty	-/120/120	

**Table 5** – Service penetrations, rigid floor, at least 120mm thick (+ aperture beading)

Description of Services	FRL	
<i>Blank Opening</i> (up to a maximum of 400mm x 400mm)	<b>Note: Refer to Section 3.1 and ensure that seal thickness (<math>t_A</math>) <math>\geq</math> 150mm</b>	
Area $\leq$ 0.16m <sup>2</sup> Or Diameter $\leq$ 400mm	<b>-/120/120</b>	
<i>Up to 60% full of Standard Cable Services</i> (up to a maximum of 400mm x 400mm or equivalent area $\leq$ 0.16m <sup>2</sup> )	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>) and Firestop Putty Bandage(A<sub>2</sub>) top side only</i>
PVC insulated Power Cables with or without cable tray (Standard D1 cable set, in accordance with AS 1530.4:2014 Appendix D)	<b>-/120/60</b>	<b>-/120/120</b>
PVC insulated Communication Cables with or without cable tray (Standard D2 cable set, in accordance with AS 1530.4:2014 Appendix D)		
Steel Conduits and Tubes up to 16mm filled with cables, optic fibres or empty	<b>-/120/120</b>	-
<i>Single Plastic Conduits and tubes:</i> <i>Rigid and Flexible PO: polyolefin (PE, PP, PPE, PPO); Rigid PVC: polyvinyl chloride</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	
Single Conduit up to 16mm filled with cables, optic fibres or empty	<b>-/120/120</b>	

**200mm thick seal in walls and floors****Table 6** – Service penetrations, flexible wall, at least 100mm (+ aperture beading)

Description of Services	FRL	
<i>Blank Opening</i> (up to a maximum of 400mm x 400mm)	<b>Note: Refer to Section 3.1 and ensure that seal thickness (<math>t_A</math>) <math>\geq</math> 200mm</b>	
Area $\leq$ 0.16m <sup>2</sup> Or Diameter $\leq$ 400mm	<b>-/120/120</b>	
<i>Up to 60% full of Standard Cable Services</i> (up to a maximum of 400mm x 400mm or equivalent area $\leq$ 0.16m <sup>2</sup> )	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>) and Firestop Putty Bandage(A<sub>2</sub>)</i>
PVC insulated Power Cables with or without cable tray (Standard D1 cable set, in accordance with AS 1530.4:2014 Appendix D)	<b>-/120/90</b>	<b>-/120/120</b>
PVC insulated Communication Cables with or without cable tray (Standard D2 cable set, in accordance with AS 1530.4:2014 Appendix D)		
Steel Conduits and Tubes up to 16mm filled with cables, optic fibres or empty	<b>-/120/120</b>	-
<i>Single Plastic Conduits and tubes:</i> <i>Rigid and Flexible PO: polyolefin (PE, PP, PPE, PPO); Rigid PVC: polyvinyl chloride</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	
Single Conduit up to 32mm filled with cables, optic fibres or empty	<b>-/120/120</b>	
<i>Bundle Plastic Conduits and tubes:</i> <i>Rigid and Flexible PO: polyolefin (PE, PP, PPE, PPO); Rigid and Flexible PVC: polyvinyl chloride</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	
Conduits up to 32mm filled with cables, optic fibres or empty. Conduits may be bundled up to 100mm in diameter	<b>-/120/120</b>	

**Table 7** – Service penetrations, rigid walls, at least 75mm thick (+ aperture beading)

Description of Services	FRL		FRL (Dintel walls)
<i>Blank Opening</i> (up to a maximum of 400mm x 400mm)	<b>Note: Refer to Section 3.1 and ensure that seal thickness (<math>t_A</math>) <math>\geq</math> 200mm</b>		
Area $\leq$ 0.16m <sup>2</sup> Or Diameter $\leq$ 400mm	<b>-/120/120</b>		
<i>Up to 60% full of Standard Cable Services</i> (up to a maximum of 400mm x 400mm or equivalent area $\leq$ 0.16m <sup>2</sup> )	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>) and Firestop Putty Bandage(A<sub>2</sub>)</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>) and Firestop Putty Bandage(A<sub>2</sub>) + Additional 100 wide putty bandage (Total bandage width is 200mm, on either side)</i>
PVC insulated Power Cables with or without cable tray (Standard D1 cable set, in accordance with AS 1530.4:2014 Appendix D)	<b>-/120/90</b>	<b>-/120/120</b>	
PVC insulated Communication Cables with or without cable tray (Standard D2 cable set, in accordance with AS 1530.4:2014 Appendix D)			<b>-/180/30</b>
Steel Conduits and Tubes up to 16mm filled with cables, optic fibres or empty	<b>-/120/120</b>	-	
<i>Single Plastic Conduits and tubes: Rigid and Flexible PO: polyolefin (PE, PP, PPE, PPO); Rigid PVC: polyvinyl chloride</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>		
Single Conduit up to 32mm filled with cables, optic fibres or empty	<b>-/120/120</b>		
<i>Bundle Plastic Conduits and tubes: Rigid and Flexible PO: polyolefin (PE, PP, PPE, PPO); Rigid and Flexible PVC: polyvinyl chloride</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>		
Conduits up to 32mm filled with cables, optic fibres or empty. Conduits may be bundled up to 100mm in diameter	<b>-/120/120</b>		

**Table 8** – Service penetrations, rigid floor, at least 120mm thick (+ aperture beading)

Description of Services	FRL	
<i>Blank Opening</i> (up to a maximum of 400mm x 400mm)	Note: Refer to Section 3.1 and ensure that seal thickness ( $t_A$ ) $\geq$ 200mm	
Area $\leq$ 0.16m <sup>2</sup> Or Diameter $\leq$ 400mm	<b>-/120/120</b>	
<i>Up to 60% full of Standard Cable Services</i> (up to a maximum of 400mm x 400mm or equivalent area $\leq$ 0.16m <sup>2</sup> )	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>) and Firestop Putty Bandage(A<sub>2</sub>) top side only</i>
PVC insulated Power Cables with or without cable tray (Standard D1 cable set, in accordance with AS 1530.4:2014 Appendix D)	<b>-/120/90</b>	<b>-/120/120</b>
PVC insulated Communication Cables with or without cable tray (Standard D2 cable set, in accordance with AS 1530.4:2014 Appendix D)		
Steel Conduits and Tubes up to 16mm filled with cables, optic fibres or empty	<b>-/120/120</b>	-
<i>Single Plastic Conduits and tubes:</i> <i>Rigid and Flexible PO: polyolefin (PE, PP, PPE, PPO); Rigid PVC: polyvinyl chloride</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	
Single Conduit up to 32mm filled with cables, optic fibres or empty	<b>-/120/120</b>	
<i>Bundle Plastic Conduits and tubes:</i> <i>Rigid and Flexible PO: polyolefin (PE, PP, PPE, PPO); Rigid and Flexible PVC: polyvinyl chloride</i>	<i>Firestop Foam (A) for full seal depth (<math>t_A</math>)</i>	
Conduits up to 32mm filled with cables, optic fibres or empty. Conduits may be bundled up to 100mm in diameter	<b>-/120/120</b>	

## 6. Direct field of application

This assessment applies to penetrations in walls exposed to fire from either side or floors exposed to fire from underside only.

## 7. 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 AS1530.4.

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

It is required that the supporting construction be otherwise tested or assessed to achieve the required FRL of the penetration seal and up to -/120/120 in accordance with AS 1530.4:2014.

## 8. Validity

This assessment report does not provide an endorsement by Exova Warringtonfire Aus Pty Ltd of the actual products supplied.

The conclusions of this assessment may be used to directly assess the fire resistance 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 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 on or, before, the stated expiry date.

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.

## 9. Authority

### Applicant undertakings and conditions of use

By using this report as evidence of compliance or performance, the applicant(s) 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 structure 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.