REGULATORY INFORMATION REPORT

An assessment of the fire resistance performance of a 150mm thick concrete floor penetrated by uPVC plastic pipes and floor wastes protected by a Hilti CP 680 110/4" S + CP 680N 110/4" N-RAD Cast-in Firestop Collar system if tested in accordance with AS1530.4-2014 and assessed in accordance with AS 4072.1-2005

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RIR 21968-07

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Testing. Advising. Assuring.

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26/03/14	RIR 21968-04	Revised with typographical amendment
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1 INTRODUCTION

This report contains the minimum information sufficient for regulatory compliance and refers to the Assessment report EWFA 21968-07.

The referenced report supersedes the previous edition 21968-06.

The referenced report presents an assessment of the fire resistance performance of a 150mm thick concrete floor penetrated by uPVC plastic pipes and floor wastes protected by a Hilti CP 680 110/4" S + CP 680N 110/4" N-RAD Cast-in Firestop Collar system if tested in accordance with AS1530.4-2014 and assessed in accordance with AS4072.1-2005.

The tested systems are described in Section 2 and are subject to the proposed variations described in Section 3 if 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 the referenced assessment is conditional on compliance with Sections 7, 8 and 9 of the referenced report.

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

2 TESTED PROTOTYPE

The referenced assessment is based on a fire resistance test WF145217/A, pertaining to tests of various stack pipe and floor waste penetrations protected with Hilti CP 680 N 110/4" N-RAD collars tested in accordance AS1530.4-1997. The test was undertaken by Warringtonfire on 24th March 2005 and sponsored by Hilti Entwicklung Befestigungstechnik GmbH, who has granted permission for this test data to be referenced in the referenced report.

The assessment also references test WF 171712/A, pertaining to tests of various stack pipe and floor waste penetrations protected with Hilti CP 680 110/4" S Firestop Collars tested in accordance with AS1530.4-2005. The test was undertaken by Bodycote Warringtonfire on 22nd April 2008 and was sponsored by Hilti Entwicklung Befestigungstechnik GmbH, who has granted permission for this test data to be referenced in the referenced report.

3 VARIATION TO TESTED PROTOTYPES

3.1 ULTRAFLOOR FLOORING SYSTEMS

As an option, the tested floor construction may be replaced by the Ultrafloor flooring system, which incorporates a layer of 12mm compressed fibre cement permanent formwork on the underside of the concrete slab. The proposal requires a hole to be cut in the formwork to completely expose the metal plate of the Hilti CP 680 N 110/4" N-RAD collar. This is proposed as an optional variation for specimen A, B and C, refer to figures 1 to 8.

3.2 ALTERNATE SUPPORT FOR PIPE ABOVE SLAB – SPECIMEN B

It is proposed that a plastic joiner may be fitted above either pipe support bracket in lieu of the self-tapping screw through the bracket into the pipe as tested in WF145217/A Specimen B. Refer to Figures 3, 4, 5 and 6.

3.3 INCREASE IN PIPE LENGTH - SPECIMEN A

It is proposed for Specimen A that the length of pipe within the furnace be increased by 25mm to 115mm (145mm including 30mm cap). Refer to Figures 1 and 2.

3.4 ALTERNATE COLLAR TYPE FOR ALL SPECIMENS

It is proposed that CP680 110/4" S cast-in fire collar as tested in WF 171712/A to be used to protect penetrations in lieu of the CP680N 110/4" N collars. Refer to figures 1 to 8.

3.5 FLEXIBLE ACOUSTIC BARRIER ON PIPES

Optionally the plastic pipes may be wrapped with flexible acoustic barrier (5.0kg/m^2) bonded to 25mm thick flexible convoluted foam. The wrap may be positioned above or below the floor though 50mm clear of the baseplate for the floor collar or from the underside of ultrafloor if present. Refer to figures 1 to 8.

3.6 FIXING OF RETROFIT ADDITION DEVICE (N-RAD)

Fixing of the CP 680 N-RAD Retrofit Firestop Collars to the CP 680 110/4" S Cast-In Firestop Collars shall be as tested using 4 off 27.5 mm long x 4 mm diameter wafer head self drilling self tapping screws as tested or ST4.2 (No.8) Type BSD Hexagon Washer Head, 4,8 x 25mm screws as supplied by Hilti.

3.7 SUMMARY OF ASSESSED SYSTEMS

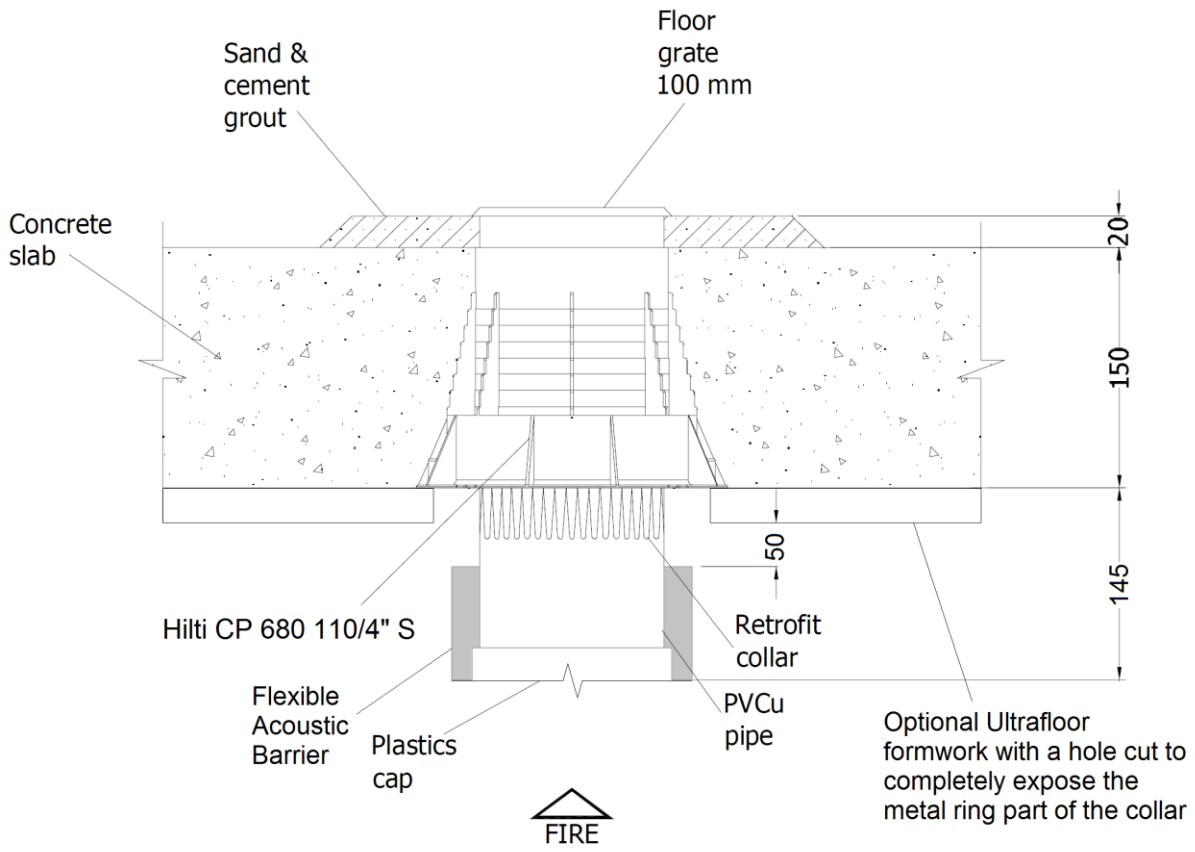

Figure 1 – uPVC floor waste – straight pipe protected with CP 680 110/4" S + CP 680 N-RAD Cast-In Firestop Collar System with Ultrafloor, optional flexible acoustic barrier at least 50mm from underside of Ultrafloor

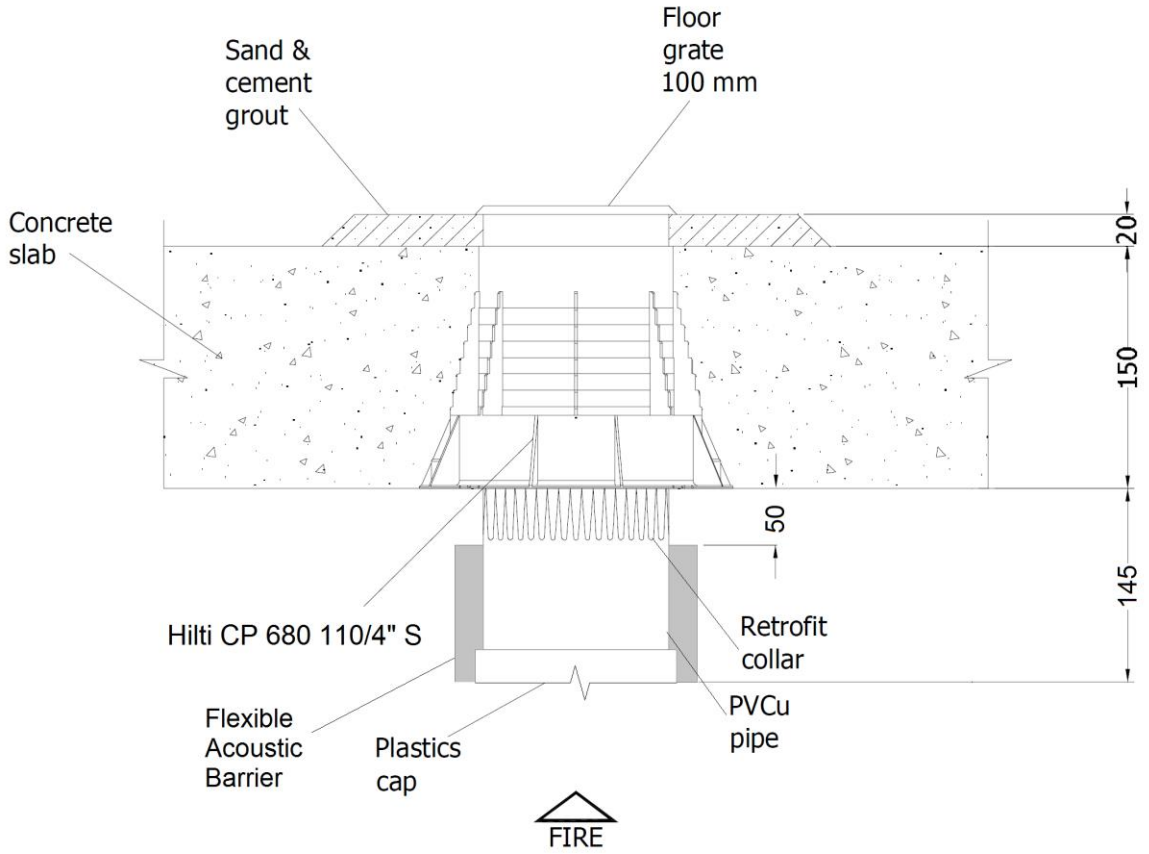

Figure 2 - uPVC floor waste – straight pipe protected with CP 680 110/4" S + CP 680 N-RAD Cast-In Firestop Collar System without Ultrafloor, optional flexible acoustic barrier at least 50mm from underside of concrete slab

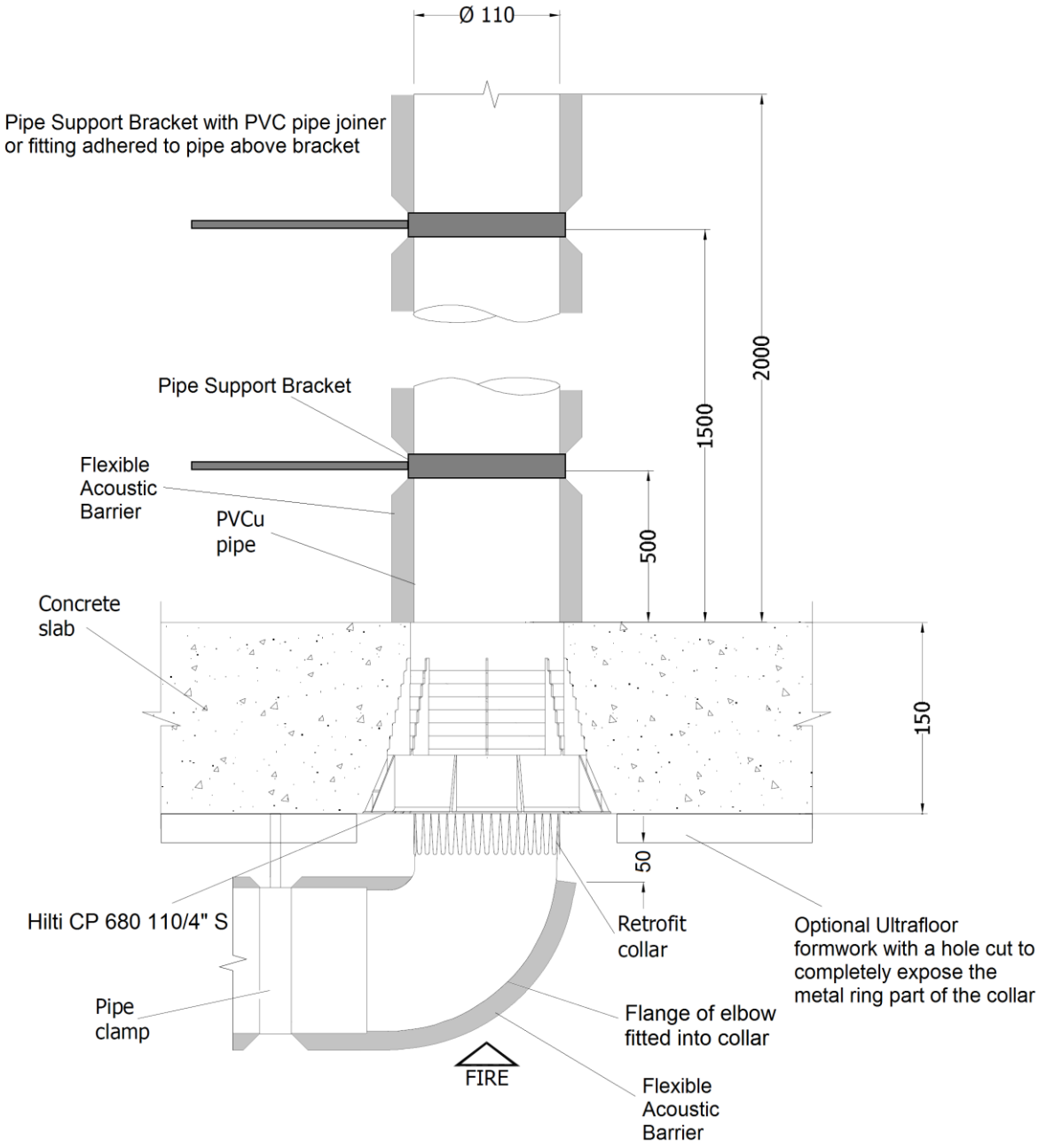

Figure 3 – uPVC pipes flange of elbow fitted into firestop collar protected with Hilti CP 680 110/4" S + CP 680 N-RAD Cast-In Firestop Collar System with Ultrafloor, optional flexible acoustic barrier at least 50mm from underside of Ultrafloor

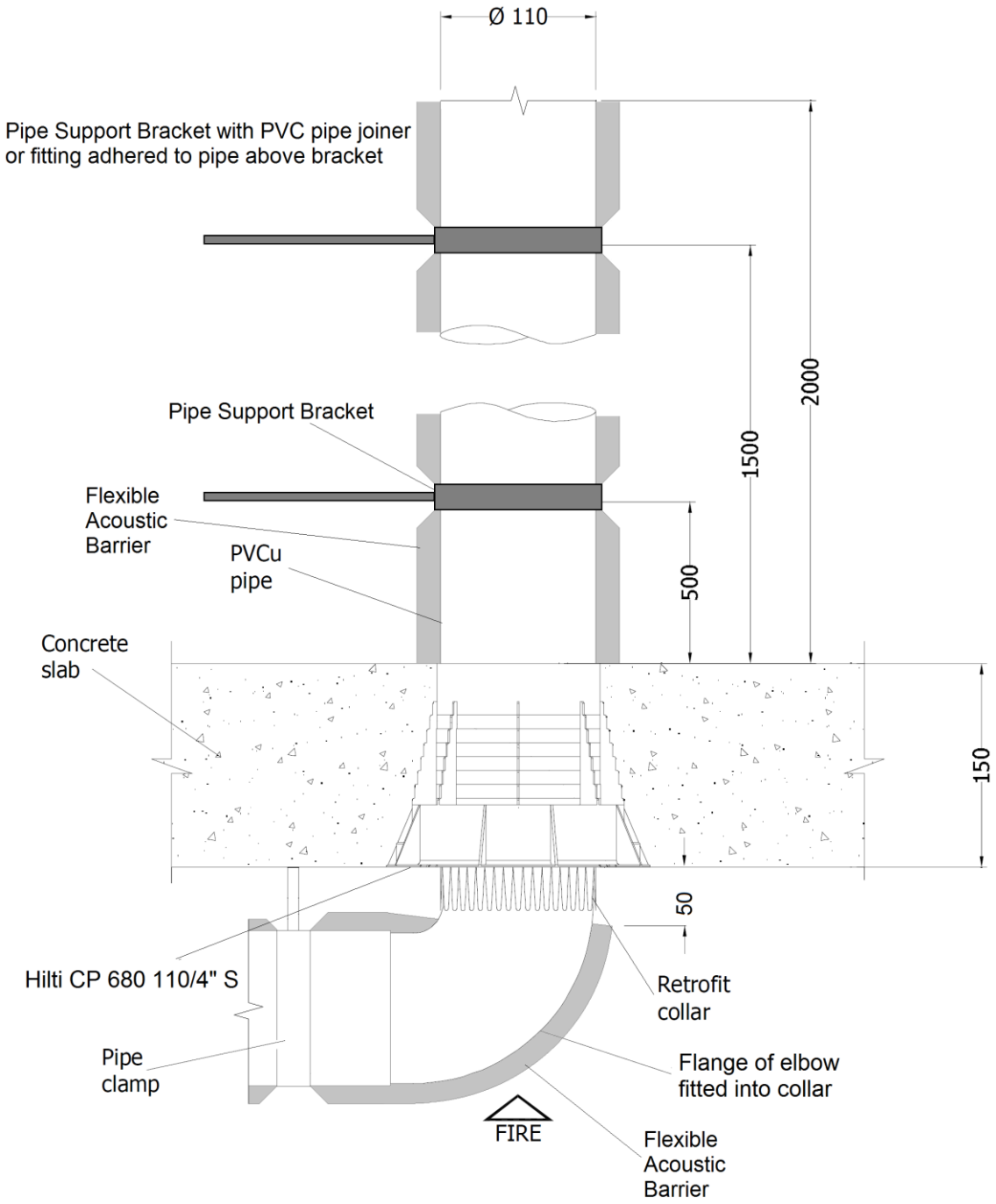

Figure 4 – uPVC pipes flange of elbow fitted into firestop collar protected with Hilti CP 680 110/4" S + CP 680 N-RAD Cast-In Firestop Collar System without Ultrafloor, optional flexible acoustic barrier at least 50mm from underside of concrete slab

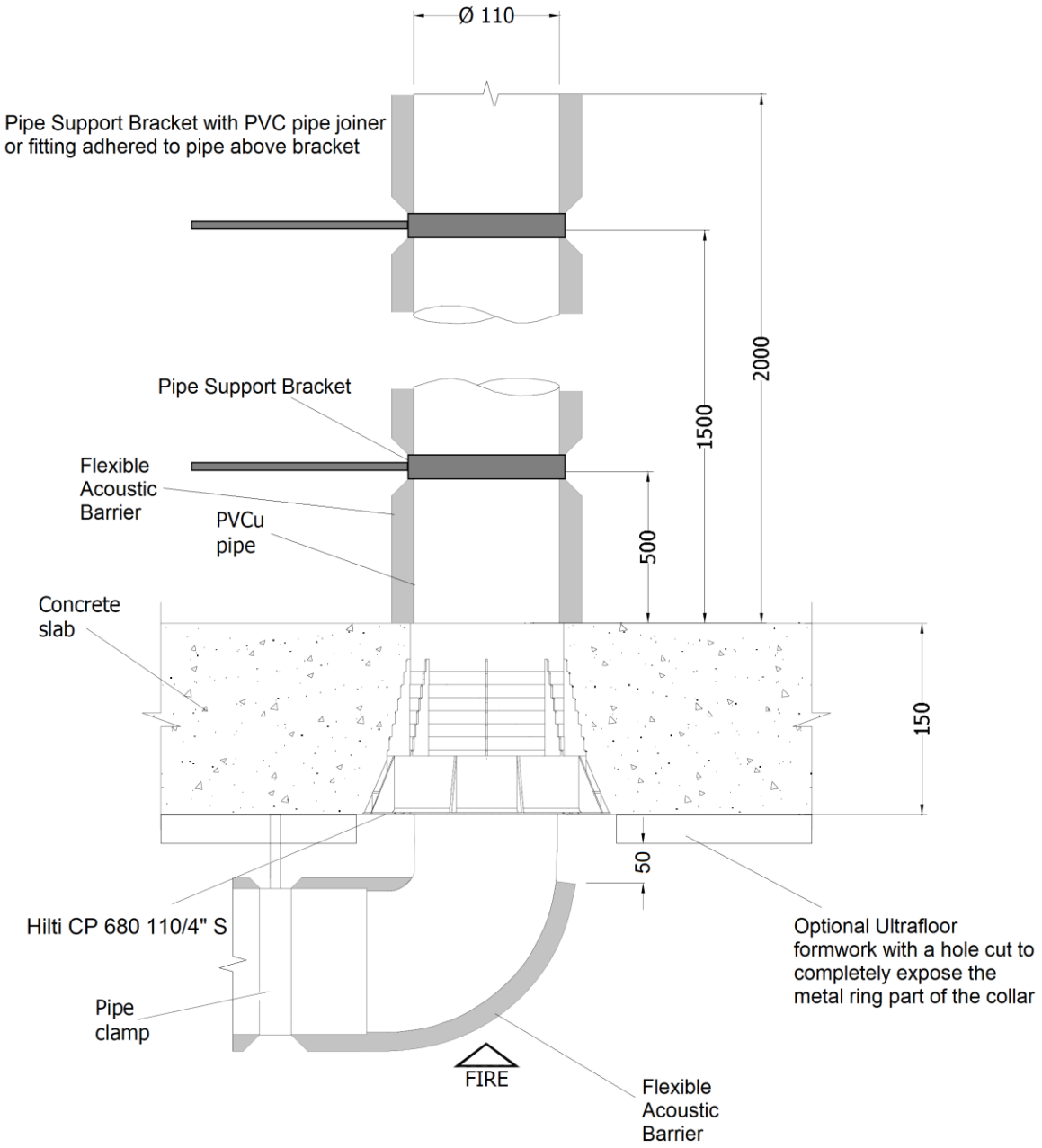

Figure 5 – uPVC pipes flange of elbow fitted outside firestop collar protected with Hilti CP 680 110/4" S Cast-In Firestop Collar with Ultrafloor, optional flexible acoustic barrier at least 50mm from underside of Ultrafloor

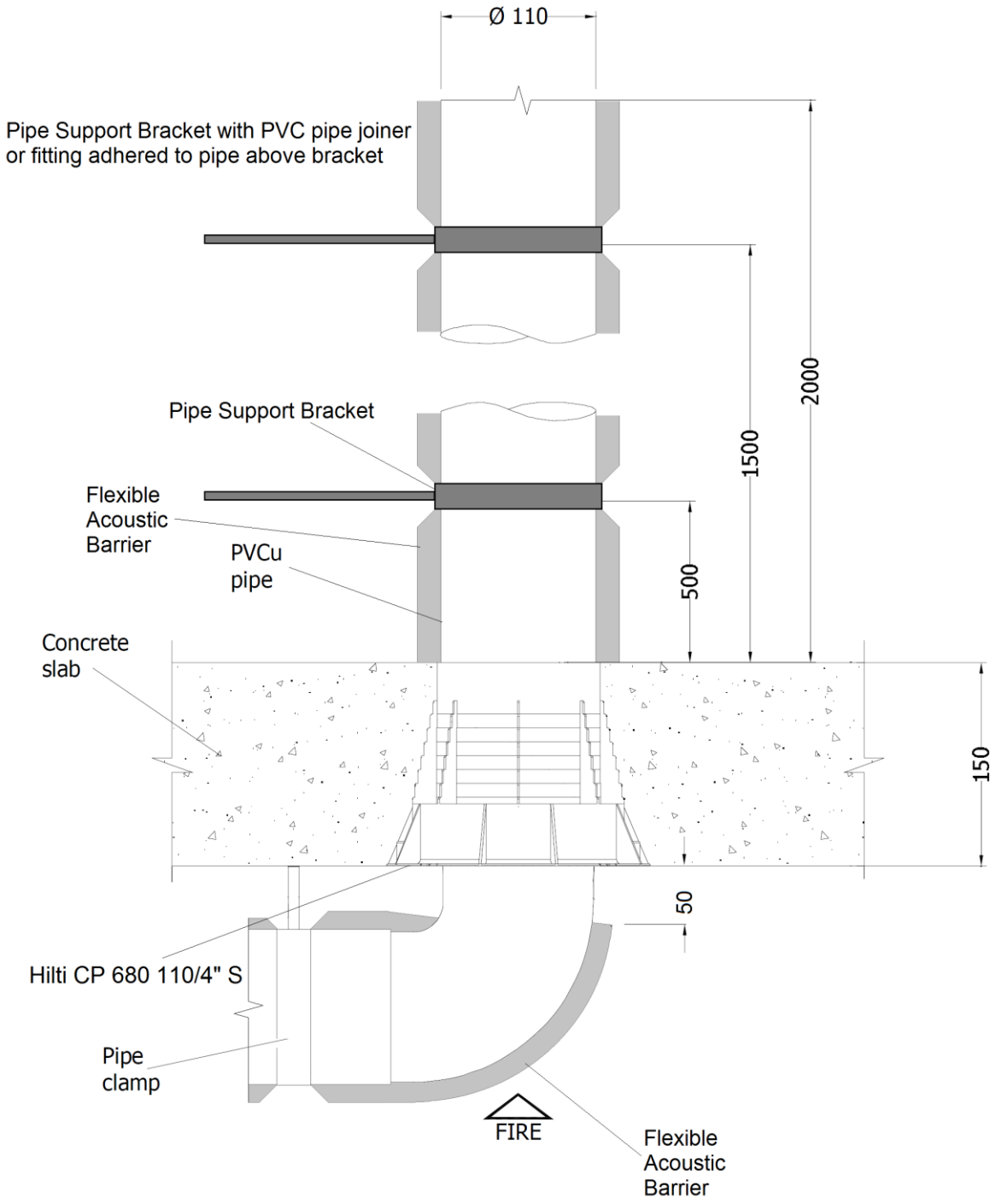

Figure 6 – uPVC pipes flange of elbow fitted outside firestop collar protected with Hilti CP 680 110/4" S Cast-In Firestop Collar without Ultrafloor, optional flexible acoustic barrier at least 50mm from underside of concrete slab

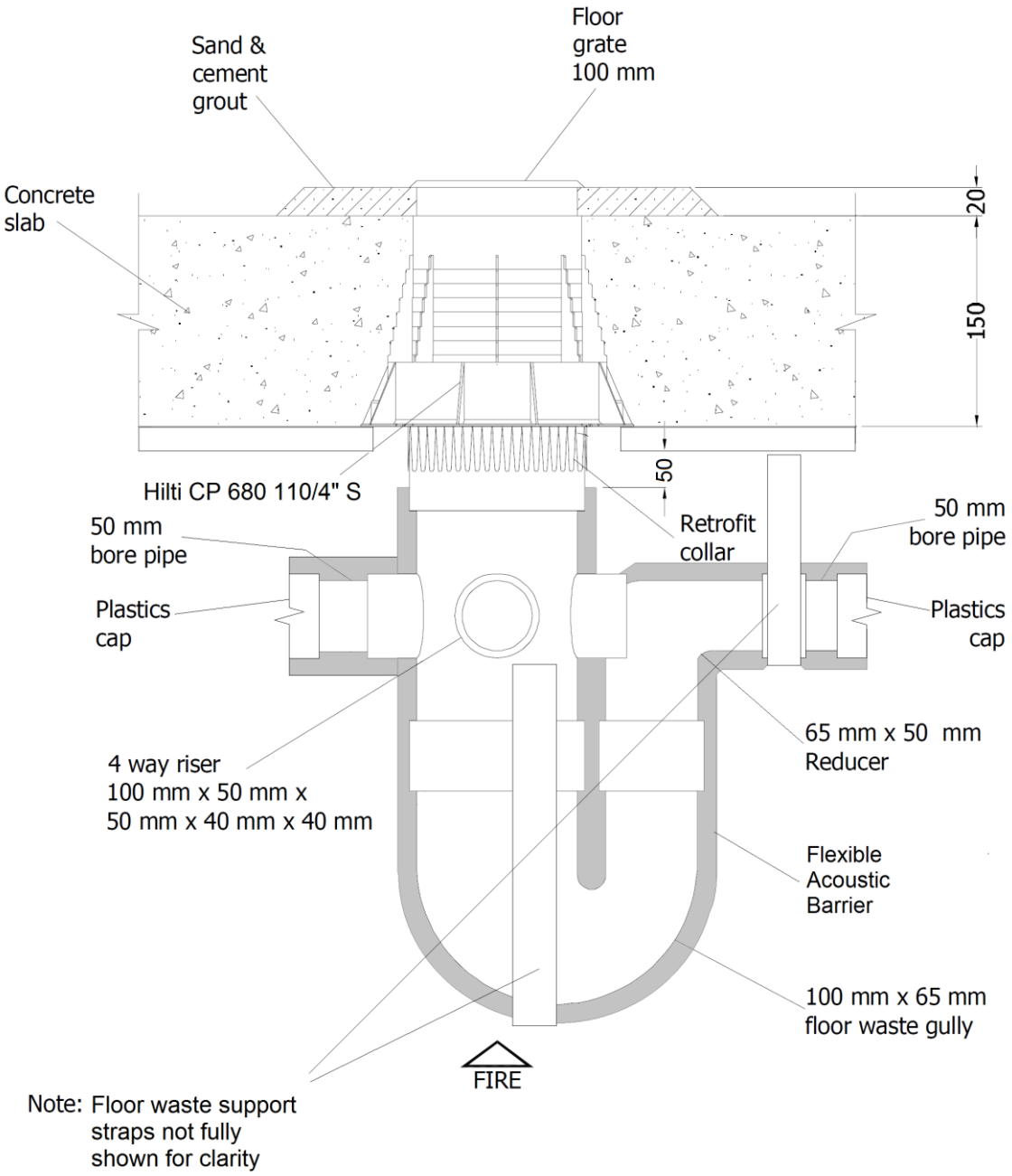

Figure 7 – uPVC floor waste – gully pipe protected with Hilti CP 680 110/4” S and Hilti CP 680 110/4” N-RAD with Ultrafloor, optional flexible acoustic barrier at least 50mm from underside of Ultrafloor

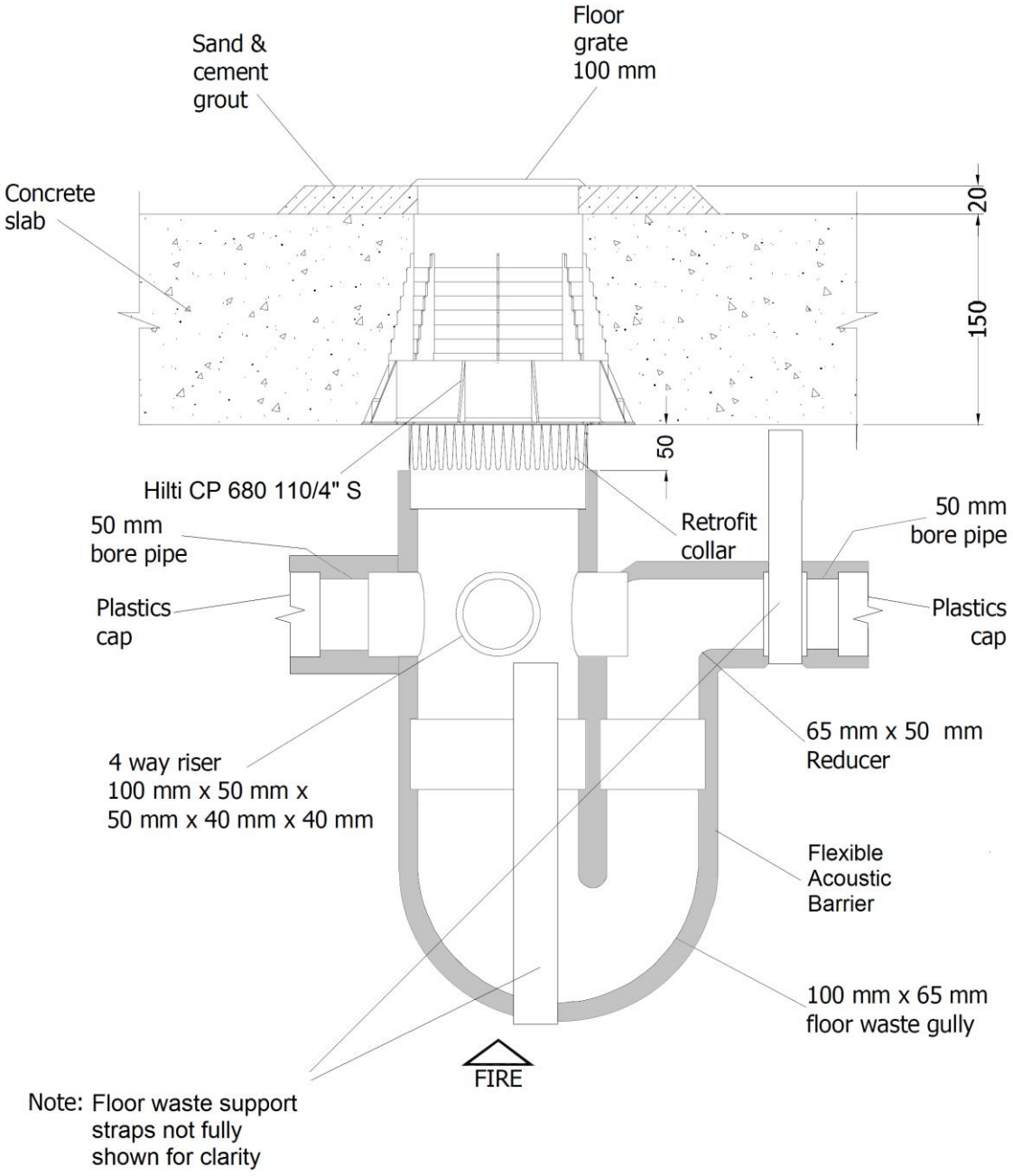

Figure 8 – uPVC floor waste – gully pipe protected with Hilti CP 680 110/4” S and Hilti CP 680 110/4” N-RAD without Ultrafloor, optional flexible acoustic barrier at least 50mm from underside of concrete slab

4 REFERENCED TEST PROCEDURES

This report is prepared with reference to the requirements AS1530.4-2014 and AS4072.1-2005 for the determination of an FRL and specimen configuration.

5 FORMAL ASSESSMENT SUMMARY

On the basis of the discussion presented in the referenced report, it is the opinion of this testing authority that if the tested prototype described in Section 2 had been varied as in Section 3, it will achieve the fire resistance as stated below if tested in accordance with the test method referenced in Section 4 when subject to the requirements of Section 7.

FRL of Proposed Construction

Application	Pipe Material	Pipe Outer Diameter	Pipe Wall Thickness	Hilti Collar System	FRL
Floor Waste (Straight Pipe) – Specimen A Figure 1 and 2	uPVC	110mm	3.2mm	CP 680 110/4" S + CP 680 110/4" N-RAD*	-/240/240
Stack Pipe – Specimen B Figure 3 and 4	uPVC	110mm	3.2mm	CP 680 110/4" S + CP 680 110/4" N-RAD*	-/240/240
Stack Pipe – Specimen B Figure 5 and 6	uPVC	110mm	3.2mm	CP 680 110/4" S	-/240/240
Floor Waste (Gully Pipe) – Specimen C Figure 7 and 8	uPVC	110mm	3.2mm	CP 680 110/4" S + CP 680 110/4" N-RAD*	-/240/240

*CP 680 110/4"N-RAD is the product code for the RAD (Retrofit Addition Device)

6 DIRECT FIELD OF APPLICATION

The application of the results of the referenced assessment is to floor elements exposed to fire from the underside as tested with the service supported as tested.

7 REQUIREMENTS

The referenced 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.

The supporting floor construction shall be capable of providing effective support of the proposed pipe and collar for the required fire period.

All services shall be supported in the manner in which they are assessed as described in Section 3 of the referenced assessment report. Any further variations with respect to size, constructional details, loads, stresses, edge or end conditions, other than those identified in the referenced report, may invalidate the conclusions drawn in the referenced report.

8 VALIDITY

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

The conclusions of the referenced 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.

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.

The 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 constructions of subsequent manufacture.

The referenced 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 the referenced report be reviewed on or, before, the stated expiry date.

The information contained in the referenced 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 the referenced report. All details of construction should be consistent with the requirements stated in the relevant test reports and all referenced documents.

9 AUTHORITY

9.1 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.

9.2 GENERAL CONDITIONS OF USE

This report may only be reproduced in full without modifications by the report sponsor. Copies, extracts or abridgments of this report in any form shall not be published by other organisations or individuals without the permission of Exova Warringtonfire Aus Pty Ltd.

9.3 AUTHORISATION ON BEHALF OF EXOVA WARRINGTONFIRE AUS PTY LTD

Prepared by:	Reviewed by:
	
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9.4 DATE OF ISSUE

06/03/2018

9.5 EXPIRY DATE

31/03/2023