



FIRE ASSESSMENT REPORT

FC11838-01

**ASSESSMENT OF THE FIRE RESISTANCE OF SNAP METAL RETRO COLLARS
APPLIED TO PROTECTING PENETRATIONS IN A HEBEL PANEL WALL WITH
RAUPIANO PIPES**

CLIENT

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ASSESSMENT OBJECTIVE

To assess the fire resistance of SNAP Metal Retrofit Collars applied to protecting penetrations with Raupiano pipes in a 75 mm thick Hebel panel wall.

CONCLUSION

It is considered that the SNAP Metal Retrofit Collars fitted each side of a 75 mm thick Hebel panel wall protecting 40 mm to 110 mm diameter Raupiano pipes, would achieve a FRL's of -/120/120 as specified in the table below, if tested in accordance with AS 1530.4:2014 and AS 4072.1 – 2005.

Pipe Material	Pipe Diameter, mm	Collar Code	FRL
Raupiano	110	LP100R-D	-/120/120
Raupiano	90	LP100R-D	-/120/120
Raupiano	75	LP100R-D	-/120/120
Raupiano	50	LP65R	-/120/120
Raupiano	40	LP65R	-/120/120

LIMITATION

This report is subject to the accuracy and completeness of the information supplied.

BRANZ reserves the right to amend or withdraw this assessment if information becomes available which indicates the stated fire performance may not be achieved.

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1. INTRODUCTION

This report gives BRANZ's assessment of the fire resistance in accordance with AS 1530.4:2014 and AS 4072.1 - 2005 of the fire resistance of a range of SNAP Metal Retrofit Collars applied to Raupiano pipes when installed in a 75 mm thick Hebel autoclaved aerated concrete (ACC) panel wall system.

2. BACKGROUND

This assessment is considered on the basis of the fire resistance performance of SNAP Metal Retrofit Collars coded LP established in CSIRO fire resistance tests FSP 1822 as summarised in Table 1.

Table 1: Summary of supporting test results of SNAP Metal Retrofit Collars in a 75 mm thick Hebel panel wall

Test Report	Pen. #	Product	Pipe dia, mm	Pipe type	FRL
FSP 1822	1	LP65R	50	Raupiano	-/120/120
FSP 1822	3	LP100R-D	110	Raupiano	-/120/120

Fire test FSP 1822 was performed in accordance with AS 1530.4-2005 "Fire resistance Tests of Elements of Building Construction", and AS 4072.1-2005 "Service Penetrations and Control Joints".

3. DISCUSSION

This assessment considers the fire resistance performance of SNAP Metal Retrofit Collars applied to Raupiano pipes.

3.1 Assessment of SNAP Metal Retrofit Collars on Raupiano pipes

The test results in Table 1 are considered in assessing the FRL of three additional penetrations in a 75 mm Hebel panel wall intermediate Raupiano pipe sizes with respective collars as listed in Table 2.

Table 2: Assessment as supported by the tested systems

Product	Pipe dia, mm	Pipe type	FRL
LP100R-D	90	Raupiano	-/120/120
LP100R-D	75	Raupiano	-/120/120
LP65R	40	Raupiano	-/120/120

The LP100R-D collar protecting a 110 mm Raupiano pipe in test FSP 1822 penetration #3 was successfully closed by 4 minutes indicated by a peak in the temperature rise measured on the pipe 25 mm from the collar. No smoke was observed from the pipe stack, further evidence of a rapid closure.

The LP65R collar protecting a 50 mm Raupiano pipe in test FSP 1822 penetration #1 was successfully closed by 3 minutes indicated by a peak in the temperature rise measured on the

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pipe 25 mm from the collar. No smoke was observed from the pipe stack, further evidence of a rapid closure.

A feature of the LP100R-D collar is that, in addition to the 59 mm wide x 5 mm thick intumescent material, the closing mechanism includes four 304 stainless steel springs bound with nylon fuse links. The observed closure was positive and the Fire Resistance achieved in FSP 1822 for penetration #3 was Integrity 121 minutes NF (no failure) and Insulation 121 minutes NF, when the test was stopped.

A similar feature of the LP65R collar is that, in addition to the 55 mm wide x 4 mm thick intumescent material, the closing mechanism includes three stainless steel springs bound with nylon fuse links. The observed closure of the test specimens at 3 minutes was positive. The Fire Resistance achieved in FSP 1822 for penetration #1 was Integrity 121 minutes NF and Insulation 121 minutes NF.

Given the positive closure of the LP100R-D and LP65R collars with the assistance of the four springs and three springs respectively it is likely that the intermediate Raupiano pipe sizes of 90 mm and 75 mm will similarly be closed and a FRL of -/120/120 is likely to be achieved.

Similarly, the 40 mm Raupiano pipe in the LP65R collar, with the assistance of the three springs, it is likely that it will similarly be closed and a FRL of -/120/120 is likely to be achieved.

4. CONCLUSION

It is considered that the SNAP Metal Retrofit Collars fitted each side of a 75 mm thick Hebel panel wall protecting 40 mm to 110 mm diameter Raupiano pipes would achieve a FRL's of -/120/120 as specified in Table 3, if tested in accordance with AS 1530.4:2014 and AS 4072.1 – 2005.

Table 3: Summary Table for SNAP Metal Retrofit Collars with Raupiano pipes in a 75 mm Hebel panel wall

Pipe Material	Pipe Diameter, mm	Collar Code	FRL
Raupiano	110	LP100R-D	-/120/120
Raupiano	90	LP100R-D	-/120/120
Raupiano	75	LP100R-D	-/120/120
Raupiano	50	LP65R	-/120/120
Raupiano	40	LP65R	-/120/120



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