

# **FAR 3237**

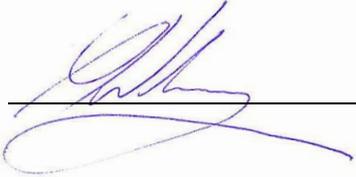
## **Timber Penetration Protection Using Firefly Plus 60**

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  - ii. Nothing in this Agreement shall exclude or limit BRANZ's liability to a Client for death or personal injury or for fraud or any other matter resulting from BRANZ's negligence for which it would be illegal to exclude or limit its liability.
  - iii. BRANZ is neither an insurer nor a guarantor and disclaims all liability in such capacity. Clients seeking a guarantee against loss or damage should obtain appropriate insurance.
  - iv. Neither BRANZ nor any of its officers, employees, agents or subcontractors shall be liable to the Client nor any third party for any actions taken or not taken on the basis of any Output nor for any incorrect results arising from unclear, erroneous, incomplete, misleading or false information provided to BRANZ.
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    - The date of performance by BRANZ of the service which gives rise to the claim;
    - or
    - The date when the service should have been completed in the event of any alleged non-performance.
- b. Indemnification: The Client shall guarantee, hold harmless and indemnify BRANZ and its officers, employees, agents or subcontractors against all claims (actual or threatened) by any third party for loss, damage or expense of whatsoever nature including all legal expenses and related costs and howsoever arising relating to the performance, purported performance or non-performance, of any Services.
- c. Without limiting clause b above, the Client shall guarantee, hold harmless and indemnify BRANZ and its officers, employees, agents or subcontractors against all claims (actual or threatened) by any party for loss, damage or expense of whatsoever nature including all legal expenses and related costs arising out of:
  - i. any failure by the Client to provide accurate and sufficient information to BRANZ to perform the Services;
  - ii. any misstatement or misrepresentation of the Outputs, including Public Outputs;
  - iii. any defects in the Products the subject of the Services; or
  - iv. any changes, modifications or alterations to the Products the subject of the Services.



# Timber Penetration Protection Using Firefly Plus 60

## 1. CLIENT

TBA Textiles Pty Ltd  
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## 2. INTRODUCTION.

This report gives BRANZ's assessment of the fire resistance of timber penetrations protected by Firefly Plus 60 in masonry or plasterboard walls, or a fire barrier comprising Firefly Titan, Firefly Plus 60, or Firetherm Intubatt 1 for at least 120 minutes fire resistance.

Where timber penetrations penetrate existing plasterboard or masonry walls it is proposed to treat them with Firefly Plus 60 such that the exposed faces of timber are wrapped and the treatment extends for a distance of 300 mm from the barrier. This would extend on both sides of the barrier. For 60 minutes fire resistance the maximum gap between the timber and wall is 10 mm. Where it exceeds 10 mm the gap will be filled with Fyreflex sealant. For 120 minutes fire resistance any gap between the timber and wall is filled with Fyreflex sealant. Figures 1 and 2 show details of the proposed penetration.

## 3. BACKGROUND

Firefly Plus 60 has been tested and assessed in accordance with BS 476:Part 22:1987 and found to give at least 60 minutes Integrity and 30 minutes Insulation. The following reports give details of the tests:

Test Laboratory	Test Number	Dimensions	Result [min]: Stability/Integrity/Insulation
Faverdale Technology Centre Ltd	FTCR/96/0057	3.0 m high x 3.0 m wide	-/67/17
Loss prevention Council	TE 93536	1.5 m long x 1.0 m wide	-/66/39

Tests have also been carried out on the mechanical properties of Firefly Plus 60 at elevated temperatures, simulating those experienced in a test to BS 476:Part 22:1987, for a height (drop) of 10 metres. These tests were carried out by T & N Technology Ltd and reported in test report No. TR/022/98.

In BRANZ assessment report FAR 1628 it was considered that the TBA Firefly Plus 60 cavity barrier system, for heights up to 6.3 metres, was suitable for at least 60 minutes Integrity and 30 minutes Insulation in terms of the criteria of AS 1530.4:1997, provided the supporting structure and fixings are suitable for at least 60 minutes fire resistance, and the fabric overlaps the steel perimeter members.

  
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## 4. DISCUSSION

Firefly Plus 60 has been shown by test and assessment to provide an FRL of at least - /60/30. It is proposed to use Firefly Plus 60 to protect timber penetrations in fire rated masonry and plasterboard walls. The effect of the Firefly Plus 60 is to limit the charring of the timber where the 300 mm long sleeve is located, and to act as a fire stopping where the timber penetrates the wall. The Firefly Plus 60 is attached on both faces of the wall. This in effect will double its fire resistance level and it is considered maintain the Integrity for at least that of the wall and Insulation for at least 60 minutes.

For plasterboard, masonry and Firetherm Intubatt 1 walls the critical part of the construction will be the gap between the timber and the wall. Where the gap is not greater than 10 mm and the FRL of the wall is not greater than 60/60/60, the Firefly Plus 60 on its own would be expected to maintain the FRL of the wall.

Where the gap exceeds 10 mm or the FRL is greater than 60/60/60, but not greater than 120/120/120, the gap needs to be filled with Fyreflex sealant. The Fyreflex Fire Rated Sealant manual gives specifications for protecting fibre reinforced cement pipes. Although timber will char, the performance is expected to be equivalent; and in any case the timber is protected by a 300 mm long sleeve of Firefly Plus 60. For plasterboard walls the sealant fills the thickness of the plasterboard on both sides for a gap size of up to 20 mm, and includes a foam backing rod. For masonry walls the Fyreflex sealant is applied to a depth of 50 mm from one side. For the purposes of this assessment, as the Firefly Plus 60 is applied to both sides, a 25 mm deep layer of Fyreflex sealant may be inserted from each side.

Where the gap between the timber and the wall exceeds 20 mm it must be made good by the wall material.

For fire barriers comprising Firefly Titan, and Firefly Plus 60, or similar, as the material for the penetration has similar properties no additional treatments are required.

## 5. CONCLUSION

It is considered that TBA Firefly Plus 60 applied to timber penetrations as shown in Figures 1 and 2, would maintain the fire resistance of a masonry or plasterboard wall, or Firefly Titan, Firefly Plus 60 or Firetherm Intubatt 1 fire barrier in accordance with AS 1530.4:2005, as follows:

FRL	Timber/Wall gap size	Fyreflex Sealant
(60)/60/60	Not greater than 10 mm	None
(60)/60/60	Greater than 10 mm	Thickness of plasterboard or 25 mm deep in masonry wall*
(120)/120/120	Any	

Note \* Sealant applied to both sides of wall with foam backing rod

In no case must the gap exceed 20 mm.

For Firefly Titan, and Firefly Plus 60 fire barriers, no additional treatment is required.

  
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## 6. LIMITATION

This assessment report is provided on the basis of the accuracy and completeness of the information provided by the client. Should any data come to BRANZ's attention relating to the fire resistance of the items discussed herein, BRANZ reserve the right to amend this report.

  
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	Report Number: FAR 3237	Date of Issue: 5 December 2008	Page 5 of 7 Pages
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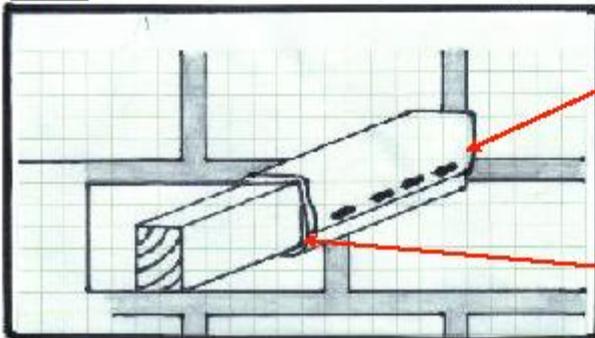
Figure 1 Penetration through wall. (Client Drawing)



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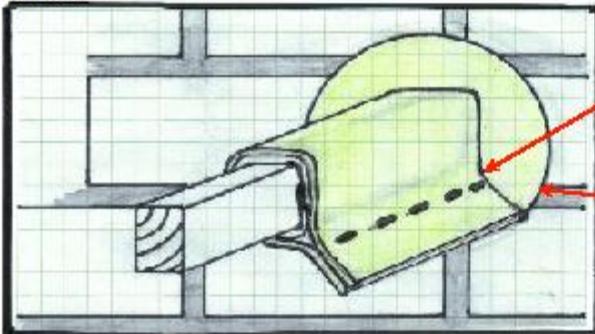
**FIREFLY TIMBER PENETRATION  
 MANAGEMENT SYSTEM**

**FIGURE 1**



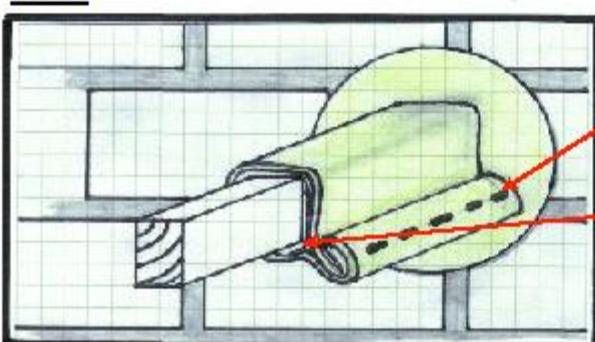
1. Cut a 300mm wide pad of either Firefly Plus 60 or Firefly Titan, then cut to fit around the penetration, overlap the joint by a minimum of 50mm and staple direct into the timber using a R11 Hammer Tacker with 10mm staples
2. Run a bead of HTA between the timber and the Firefly

**FIGURE 2**



1. Cut the Collar Roll to fit around the Firefly Pad and staple 100 mm wide seam together at 50mm centres using R31 Staple Gun and 8mm staples
2. Run 2 beads of HTA between Collar Roll skirt and compartment wall

**FIGURE 3**



1. Double fold the seam and staple through all four layers at 50mm centres using a R31 Staple Gun and 8mm staples
2. Run a bead of HTA between the Collar Roll and Firefly Pad

This system can be used to seal timbers which penetrate compartment walls of a variety of material, namely; Firefly Titan, Firefly Plus 60, masonry, fire-rated plasterboard and Firetherm Intubatt 1. This process must be carried out to both sides of the compartment wall to give the required FRL.

  
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Figure 2 Penetration through wall under roof (Client Drawing)



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**FIREFLY TIMBER PENETRATION  
 MANAGEMENT SYSTEM**

FIGURE 1

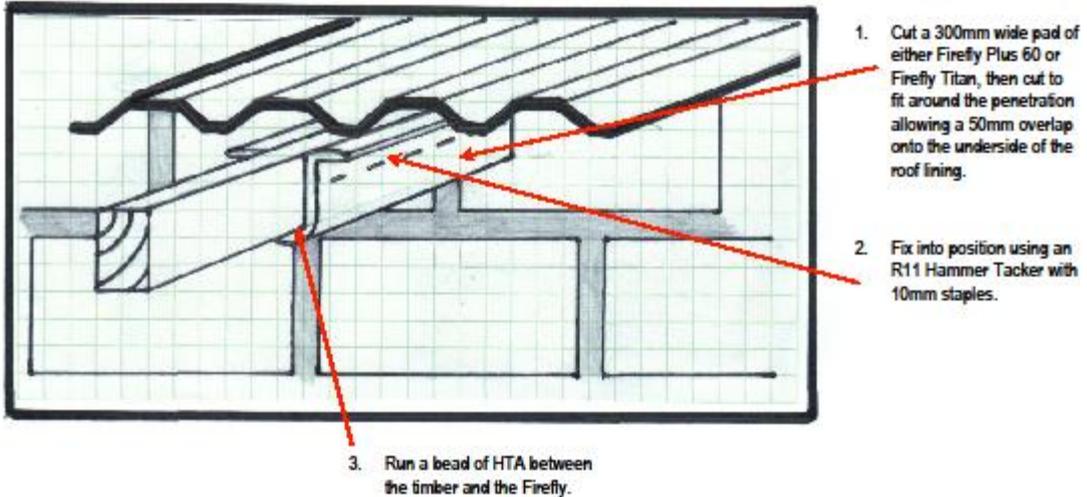
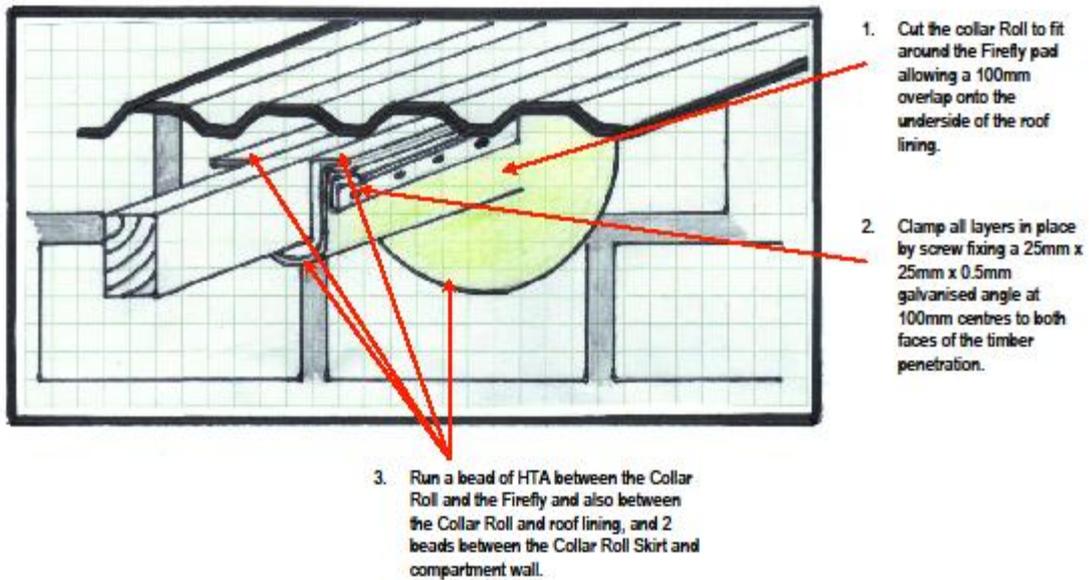


FIGURE 2



  
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