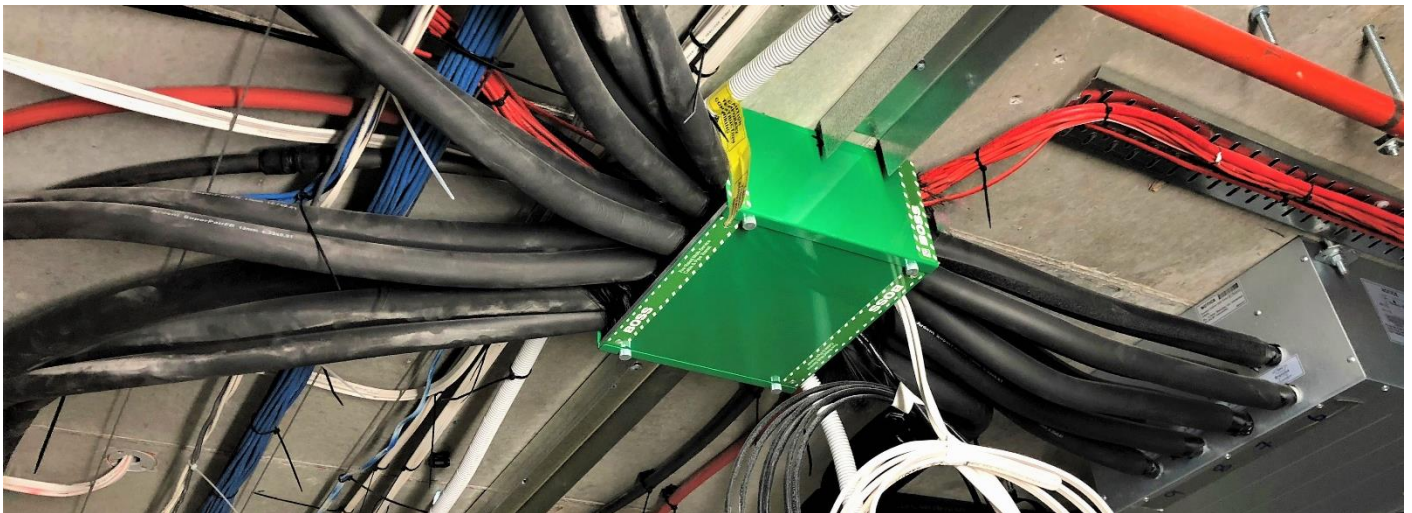# BOSS Fire® Transit Box

The GameChanger - Multi-Service Cable & Pipe Transit

Proven passive fire protection for mixed electrical, plumbing & HVAC+R service bundles.
Tested to AS1530.4: 2014 & AS4072.1-2005.


Technical Data Sheet

Edition 7
February 2021

KEY BENEFITS

- **Up to 2 hour fire rating (FRL -/120/120)**
- **Rw50 acoustic rating**
- **Approved for walls, floors & ceilings**
- **Wide variety of services and mixed combinations**
- **Saves up to 90% of labour costs**
- Makes AS1851 periodic maintenance inspections simple and reliable
- Services can be easily added after installation
- Tested & approved to AS1530.4-2014 and AS4072.1-2005
- Many typical apartment service configurations available
- Large variety of electrical, plumbing & HVAC services certified
- Drastically lowers total cost of apartment firestopping
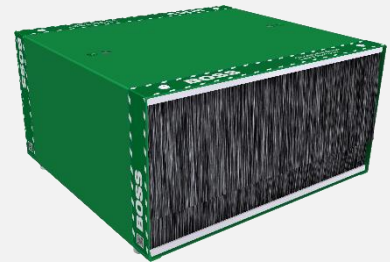
INTRODUCTION

The BOSS Fire® Transit Box is revolutionising firestopping methods for large bundles of mixed services. Designed to allow large bundles of pipes and cables to all pass through one single fire rated enclosure, the BOSS Fire® Transit Box is the only tested and proven method of firestopping multiple services with such simplicity of installation and ease of compliance. Commonly used for apartment entry configurations above an entry door to an SOU, the BOSS Fire® Transit Box services is also suited for service risers, shafts, plant areas and data rooms in a variety of residential, commercial and industrial buildings.

The new generation of BOSS Fire® Transit Box is now tested and approved to AS1530.4: 2014 and AS4072.1-2005 for 60, 90 and 120 minute configurations on a larger variety of services than ever before. New approvals relate to a wider variety of wall, floor and ceiling systems.

For individual services or infill requirements BOSS Fire® also offers a wide range of traditional firestopping methods that includes collars, sealants and other cavity barriers such as batts, pillows and mortar.

APPLICATIONS

The BOSS Fire® Transit Box is suitable for a wide variety of buildings where multiple services need to pass through a fire rated wall, ceiling or concrete floor slab. Typical projects include apartments, hotels & student accommodation for SOU entries, services cupboards or shafts and risers. The BOSS Fire Transit Box can also be used in commercial buildings such as data centres, hospitals and aged care facilities. Typical bundles of services include:

- Steel Sprinkler Pipes
- Copper Gas / Water Pipes
- uPVC & cPVC Pipes
- PEX & PEX-AL Water & Gas Pipes
- Air Conditioning Lagged Copper Pipes / Paircoil
- HDPE, PP, PP-R & PB Pipes
- Lagged & Unlagged PE-RT or PE-RT Kelox Pipes

- Power Cables
- Mains Cables
- uPVC Conduits
- Data / Comms Cables – NBN, CAT6, CAT5E, CAT7
- Coax Cables – CATV / MATV / SMATV
- Security, Lan, Fig 8, Fibre Optic, EWIS & Speaker

> **For detailed approval information on the fire certification including service sizes, approved substrates and tested systems refer to page 5 of this Technical Data Sheet.**

TRADITIONAL PASSIVE vs BOSS FIRE® TRANSIT BOX

The BOSS Fire® Transit Box has a large variety of certified services tested and approved that simply **"pass through"** the box. **There is no need to core individual penetrations for each service, or cut any inserts, nor do you need to seal or treat every individual service.** The BOSS Fire® Transit Box allows you to group various electrical, plumbing, HVAC+R services all through one easy to use and easily certified box. The unique **BrushSeal™** allows services to be passed through the box at any time of construction, or even later after a project has been completed making it easier than ever for maintenance contractors and building managers to maintain fire compliance once the building is occupied.

Above: Traditional Passive Fire
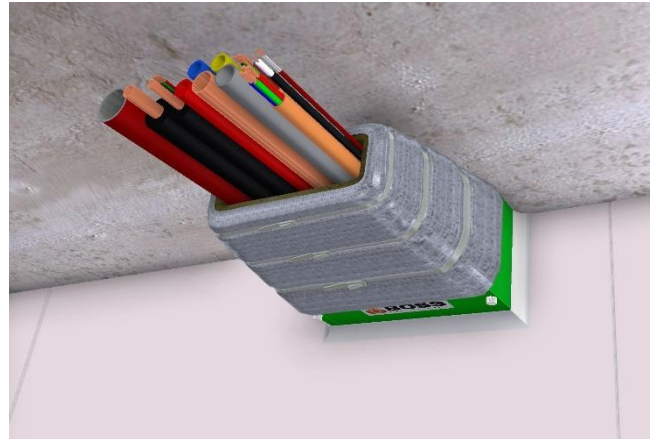
Above: BOSS Fire® Transit Box

The BOSS Fire Transit Box also contains an internal trapeze bar that is provided to assist with separation of services as per AS3500 compliance.

NB - an internal Trapeze is provided inside the box for aiding separation between services. Where separation is required, such as between power & data cables or gas and hot water services, position the services on the Trapeze and fix into place with cable ties. It is important that services are independently supported of the transit box. Consult AS/NZ 3500 for more detail on the separation of the services your system contains.

WRAPPING SERVICES

The **BOSS P40 MAK-Wrap** is a foil-faced rockwool thermal wrap used to insulate services from heat transfer. By wrapping the services that penetrate the fire barrier and pass through the transit box, the FRL can be increased to a maximum of -/120/120.

Whether your configuration requires wrapping of services or not will be determined by the FRL required and the items that penetrate the fire barrier. Ensure you read and understand the test reports or compliance data to ensure your services are adequately protected. For summary information refer to pages 5-8 in the Fire - Certified Services section of this document.

HOW DOES IT WORK IN FIRE?

The BOSS Fire® Transit Box consists of an advanced high pressure intumescent that, upon getting exposed to high temperatures, expands to create a high performance fire seal. Coupled with the unique BOSS Fire® BrushSeal™ that is designed to make the installation and compliance simple, ultimately leading to an industry-leading level of protection.

The BOSS Fire® Transit Box benefits from the same advanced intumescent technology as the best-in-category BOSS FireMastic-HPE™ intumescent sealant.

The BOSS Fire® Transit Box shown on the right during a fire test just after 120 minutes.

BOSS Fire® Transit Box 150mm and 300mm shown above after successfully passing a 120minute AS1530.4 Fire Resistance test at **Warringtonfire, Dandenong VIC**. *The images show the intumescent seals inside the BOSS Fire® Transit Box expand and completely seal around the services passing through the box.*

ACOUSTIC PERFORMANCE

Marshall Day Acoustics Pty Ltd were engaged to review the sound performance of typical scenarios where the BOSS Fire® Transit Box is used in residential and hotel buildings. The review considers the necessary elements that are involved in creating an overall acoustic compartment for sound transmission loss. The report also covers all typical wall systems which would incorporate the BOSS Fire® Transit Box. **Refer Report Lt 001 R01 20181092.**

Location	System	Conditions	Sound Insulation
Above Apartment Entry Door	BOSS Fire® Transit Box completely open combined with 10mm plasterboard ceiling.	• BOSS Fire® Transit Box located within 1.5m from entry door.	≥ Rw 40
In Apartment Corridor Wall	BOSS Fire® Transit Box with BOSS P40-MAK Wrap on both sides with 10mm plasterboard ceiling.	• BOSS Fire® Transit Box located anywhere within corridor wall above the ceiling.	≥ Rw 50

FIRE - CERTIFIED SERVICES

The BOSS Fire® Transit Box has a large variety of certified services and configurations available. Refer to below tables for summary information.

> **Important:**
>
> **Fire separation is a critical part of life safety in building design and must be treated carefully. Follow the steps below to help ensure the appropriate passive fire products are selected and that installation is carried out correctly and compliantly.**
>
> - **Select the BOSS Fire Transit Box for installation only into approved applications, which include FR walls, floors & ceilings. Ensure the BOSS Fire Transit Box is used to treat only approved services.**
>
> - **The BOSS Fire Transit Box is designed specifically to house bundles of penetrating services, either of the same in material type and size, or of multiple compositions. It is not designed for blank openings, therefore if your requirement is to fill a blank aperture in a FR wall or floor that contains no penetrating services, we recommend other low cost and simple sealing systems.**
>
> - **Penetrations in fire rated barriers can weaken the fire integrity of a building element. Therefore, it's recommended to always select the smallest size BOSS Fire Transit Box available that your installation and service configuration requires.**
>
> - **Ensure that you read and understand the appropriate certification and how it relates to your specific application.**
>
> - **Ensure the approved applications detailed in test and assessment reports is applicable to your construction detail. Always follow manufacturer's installation instructions and read and understand the information contained in the certification and product literature.**
>
> - **This Technical Data Sheet must be read in conjunction with the product Installation Guide. Always read and understand these documents carefully.**
>
> - **Minimum thickness applies to the penetrating substrate. Where mentioned localised thickening may be applied. Refer to relevant performance tables for specific information.**
>
> - **For unwrapped service configurations we recommend that the BOSS Fire Transit Box maintain minimum fill rates:**
>
>   - **FRL -/60/60, 15 % minimum fill**
>   - **FRL -/90/90, 20% minimum fill**
>   - **FRL -/120/120, 30 % minimum fill**
>
> - **'Fill rates' are calculated by adding up the total Cross Sectional Area (CSA) of all services penetrating the box divided by the total CSA inside the box, expressed as a percentage. Please contact BOSS Fire for assistance in calculating minimum fill rates.**
>
> - **Make sure you check your relevant Building Regulations, local laws and AS/NZS Standards to properly understand your obligations.**
>
> - **Ensure you have an accredited Certifier or 3rd party compliance inspector to check your proposed system before installation. Pre-approval can help to save significant costs and delays and avoid non-compliance.**
>
> - **For details on 'as-tested' and laboratory assessed systems, contact BOSS Fire at bossfire.com.au or +612 9531-8591**

FIRE - CERTIFIED SERVICES

All wall, floor & ceiling systems mentioned below in Table 2 must have an established AS1530.4 complaint FRL. The FRL shown in Table 2 may be applied to a lesser FRL relevant to the certified substrate it is used in. Overall FRL of the system will be subject to the least performing substrate, element or service.

Table 2. Plumbing, Electrical & HVAC/R Systems in Walls, Floors & Ceilings

System Description	Wall / Floor Substrate	Service Penetration	FRL With Wrap*	FRL Without Wrap*	Certification Reference
It is considered that any combination of the below penetrations, and any number of these penetrations in the BOSS Fire® Transit Box, will achieve the FRL mentioned in the corresponding substrates from the same table.				
BOSS Fire® Transit Box With or without *BOSS P40-MAK Wrap Ref FRL Columns.	**Walls (Minimum 100mm Thick):** • Steel or Timber Framed Fire Rated Plasterboard Lined Walls • Blank Infill Panel of BOSS Batt • Concrete • Solid or Hollow Masonry • AAC / Hebel • Speedpanel • Korok • Supapanel • Pronto Panel • Dincel • AFS • Shaftliner / Shaftwall • Partiwall / Party Wall • IntRwall **Where wall is less than 100mm it may be increased by locally applied lining:** • Fire Rated Plasterboard • BOSS Batts • P40-MAK Wrap • Increased fillet size of fire rated sealant approved to AS1530.4: 2014. **Floors:** • Concrete Floor Slabs Minimum 70mm Thick with P40-MAK Wrap or • Concrete Floor Slabs Minimum 110mm Thick **Fire Rated Ceiling and Ceiling / Floor Systems**	**Metal Pipes**			**Branz FTC 843 Issue 3**
		Paircoil up to 13/19mm insulated copper Pipes	-/120/120	-/120/90	
		Copper Pipe up to 25mm OD with minimum 13mm thick non-combustible lagging AS1530.1	-/120/120	-/120/60	
		Copper Pipe up to 32mm OD with minimum 19mm thick continuous Armaflex FRV, K-Flex lagging or Thermobreak lagging	-/120/120	-/120/120	
		Copper Pipe up to 50.8mm OD with minimum 25mm thick FR lagging	-/120/120	-/120/60	
		Copper Pipe up to 50.8mm OD uninsulated	-/120/120	-/120/-	
		Steel Sprinkler Pipe up to 60.3mm OD	-/120/120	-/120/120	
		Combustible Pipes			
		PEX & PEX-AL-PEX Pipes up to 32mm Dia. with or without lagging.	-/120/120	-/120/90	
		uPVC Pipe & Conduit up to 55.8mm OD	-/120/120	-/120/120	
		cPVC Pipe up to 60.3mm OD	-/120/120	-/120/120	
		PP and PP-R Pipes up to 32mm OD	-/120/120	-/120/60	
		PB Pipes up to 32mm OD	-/120/120	-/120/60	
		HDPE Pipes up to 32mm OD	-/120/120	-/120/60	
		PE-RT Pipe or PE-RT Kelox pipe up to 32mm OD with or without lagging	-/120/120	-/120/-	
		Electrical Cables			
		**Appendix D1 Power Cables (exempt 630mm²)	-/120/120	-/120/60	
		Multi Core Power Cables: Individual conductor up to 16mm². Total Maximum cross sectional area not greater than 48mm² per cable.	-/120/120	-/120/90	
		**Appendix D2 Data / Comms Cables also including: CAT5, CAT5E, CAT6, CAT7, COAX, MATV, SMATV, CATV, Fig 8, Fire Alarm, EWIS, LAN, Security, NBN, Fibre Optic & speaker cables.	-/120/120	-/120/90	
		Cables with Aluminium core 185mm² or less	-/120/120	-/120/30	

In preceding Table 2 it refers to Appendix D Cables. Please refer to AS1530.4: 2014 Appendix D. The cables referenced in Appendix D are a standard set of power and communications cables that represent the various cable types available within Australia and New Zealand.

FIRE - CERTIFIED SERVICES CONTINUED

All wall systems mentioned below in Table 3 must have an established AS1530.4 complaint FRL. The FRL shown in Table 3 may be applied to a lesser FRL relevant to the certified substrate it is used in.

### Table 3. Various Services in Cross Laminated Timber Wall Systems

System Description	Wall Substrate	Service Penetrations	FRL With Wrap	Certification Reference
		It is considered that any of the services may be removed from the below combinations provided that services remain bundled with no gaps.		
BOSS Fire® Transit Box with BOSS P40-MAK Wrap	**Cross Laminated Timber**	Typical Apartment Configurations: • PEX Pipes up to 25mm • PEX AL Pipes up to 25mm • Lagged Paircoil up to 13mm / 19mm • Electrical Cable 2C+E 10mm² • Electrical Cable 2C+E 2.5mm² • Electrical Cable 2C 2.5mm² • CAT5E Data Cable • COAX Cable – CATV / MATV / SMATV • 6C Security Cable • Fire Alarm System Cable – Light Duty AS/ACIF S008 • Communication Data Cable SOLID PVC TIA/EIA-568.B.2 • Galvanised Steel Pipe up to 40mm • Lagged / Unlagged Copper up to 32mm • uPVC Conduit up to 32mm D1 Cable: Single Large PVC sheathed cables that are up to 185mm² with maximum diameter 52mm 60 Type "F" Cables. PVC Sheathed Telecommunications cables each with Max Dia 17mm consists of 20C x 2mm² PEX Pipes up to 25mm Dia (Up to 14 Pipes) PEX-AL Pipes up to 25mm Dia (Up to 14 Pipes) uPVC Pipes & Conduits up to 32mm Dia (Up to 14 Pipes) HDPE Pipes up to 32mm (Up to 14 Pipes) PP Pipes up to 32mm Dia (Up to 14 Pipes) PB Pipes up to 32mm Dia (Up to 14 Pipes) Lagged or Unlagged Copper / Refrigerant Copper up to 40mm Dia. (Up to 14 Pipes) Paircoil up to 13/19mm (Up to 14 Pairs) Metal Pipes up to 50mm Dia	-/90/90	**EWFA 55679800.1**

FIRE - CERTIFIED SERVICES - TYPICAL APARTMENT CONFIGURATIONS

All wall systems mentioned below in Table 4 must have an established AS1530.4 complaint FRL.

## Table 4. – Typical Apartment Entry Systems

System Description	Wall Substrate	Service Penetrations	FRL (No Wrap)	Certification Reference
BOSS Fire® Transit Box	118mm FR Plasterboard / GIB Wall System	**Typical Apartment Configuration:** • Mains Power Cable 16mm² 2C+E • 20mm PEX Cold Water Pipe • 20mm PEX AL Gas Pipe • 40mm Steel Sprinkler Pipe (48.4mm OD) • Coax Cable – CATV / MATV • Cat5 Data Cable • 20mm NBN Conduit with NBN Cables • 2 x 32mm Copper Pipe with 25mm thick Armaflex Lagging • Hot Water Meter Cable (Fig 8 0.75mm² 2C)	-/60/60	**CSIRO COT3381**
BOSS Fire® Transit Box	118mm FR Plasterboard / GIB Wall System	**Typical Apartment Configuration:** • Mains Power Cable 16mm² 2C+E • 20mm PEX Cold Water Pipe • 25mm PEX AL Gas Pipe • 16mm PEX Hot Water Pipe with Armaflex Lagging • 32mm Steel Sprinkler Pipe (42.8mm OD) • Coax Cable – CATV / MATV • Cat5 Data Cable • Cat6 Data Cable • 20mm NBN Conduit with NBN Cables • 2 x 32mm Copper Pipe with 25mm thick Armaflex Lagging • 38mm Copper Pipe with 25mm thick Armaflex Lagging • Figure 8 Cable 0.75mm² 2C • Fire Alarm Cable 2.5mm² 2C	-/60/60	**CSIRO COT3382**
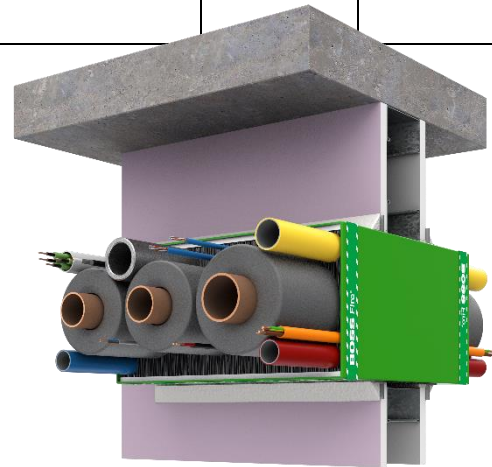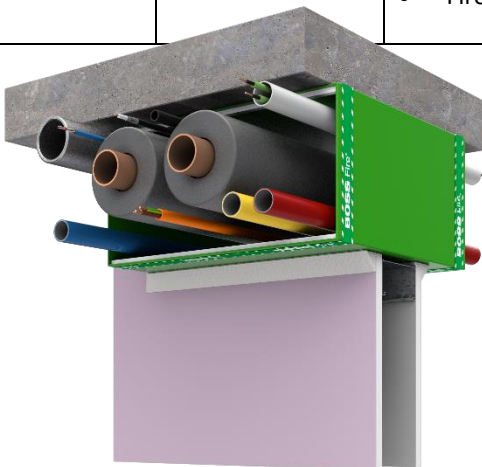
PROJECT SHOP DRAWINGS

It is a common practice on large projects where multiple service trades are utilising the BOSS Fire® Transit Box for there to be a project-specific shop drawing to ensure the correct placement and spacings of services within the transit box. It is important to note that the BOSS Fire® Transit Box does not rely on any specific layout or spacings of services for fire performance, rather the only spacing requirements relate to separate Australian / New Zealand standards for plumbing and electrical items. It is the responsibility of the specialised trades who are installing services to nominate their required spacings to the relevant Australian Standards, such as AS3500.
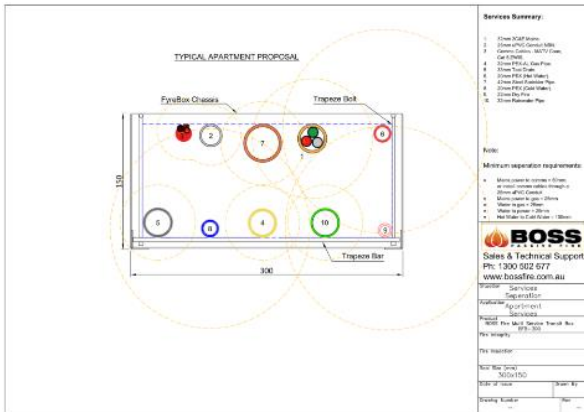
For large projects where there is a significant volume of BOSS Fire® Transit Boxes the team at BOSS may be able to assist with a project shop drawing based on project specifications.

AWARDS

The BOSS Fire® Transit Box is now a MULTI-AWARD winning innovation that has revolutionised the passive fire industry. Awards received include:

- 2017 Fire Protection Industry Awards:
  - Project of the Year Award Under $1 Million in conjunction with Multiplex - Capitol Grand
- 2018 Australian Construction Awards:
  - Product Innovation of the Year

HEALTH AND SAFETY

To learn more about the safe handling of BOSS Fire® Transit Box, see the Safety Data Sheet available at bossfire.com

IS THIS PUBLICATION CURRENT?

This document may be superseded by new versions. If you are unsure of whether or not this document is a current publications, please call us on +61 2 9531 8591 to confirm.

LIMITATION

BOSS Fire & Safety Pty Ltd has provided the above technical information in good faith and to the best of its knowledge. This information was deemed to be correct at the time of publication. Should any data come to BOSS Fire & Safety's attention relating to the fire resistance or performance of the product described, BOSS Fire & Safety reserve the right to amend this report.

BOSS Fire & Safety strive to constantly improve and develop products so this information may change without notice.

The information contained herein has been developed as a guide only and it does not constitute a guarantee of compliance of all applications. Each project and/or application may have specific requirements and you should investigate these carefully. Ensure that you have read and understood the appropriate certification relative to your needs, and ensure you seek acceptance from the Certifying Authority or compliance inspector before installation. For updates on the range of BOSS Fire® certification please contact BOSS Technical Services. +61 2 9531 8591

FURTHER INFORMATION

For additional technical information on the performance of BOSS Fire® Transit Box, other BOSS Fire® products or any other BOSS Fire® related information please contact us on:

Phone	1300 50 2677
NZ Phone	0800 50 2677
Fax	1300 60 2677
International	+612 9531 8591
Email	info@bossfire.com.au
Web	bossfire.com
Address	Unit 1, 16 Atkinson Rd Taren Point NSW 2229 AUSTRALIA