

**PPS** FIREBOARD

# FIREBOARD EURO CLASS A1

Specifications

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## BOARD WEIGHTS AND SIZES

Thickness (mm)	Width (mm)	Length (mm)	Weight per Board (kg)	Surface (m2)
9	1200	2400	28.5	2.88
		2700	32	3.24
		3050	36.4	3.66
		2440	29.5	2.98
12	1200	2400	38	2.88
20	1200	2400	63	2.88
6	1200	2400	19	2.88
9	1220	2289	27.6	2.79
		2440	29.6	2.98
		2560	30.4	3.12
		3050	36.8	3.72
15	1220	3000	60.4	3.66
18	1220	2440	59	2.98

## RACKING STRENGTH

9mm Boarded Panel	Load per stud (kN)	Racking Load Fmax (kN)	Racking Stiffness (N/mm)	Racking Resistance Requirement in accordance with BS 5268-6.1 (kN/m)	Basic Test Racking Resistance of Board according to (kN/m)
Perimeter fixings at 150mm and mid panel stud fixings at 300mm	0	11.14	2448	1.68	2.5
	5	18.36	2626	1.68	2.36
Perimeter fixings at 50mm and mid panel stud fixings at 100mm	0	25.84	1461	1.68	3.46
	5	37.85	2628	1.68	3.45

## THERMAL INSULATION

Coefficient of thermal conductivity $\lambda$	0.19
U-Value 9mm	21.30
U-Value 12mm	15.90
U-Value <b>18mm</b>	9.52

## FIRE PERFORMANCE

Euro class EN13501-1: 2007 +A1*	Euro Class A1 Non-Combustible All Thicknesses
BS EN 476 (Parts 6&7)*	Class 0 All Thicknesses
BS EN ISO 1182 Reaction to Fire*	Fire Test for Non-Combustibility of Building Products
BS EN 1716 Reaction to Fire	Determination of Heat Combustion for Building Products
BS EN 476 (Part 22 timber frame)*	See relevant Test Reports for systems and applications

\* for fixing details, please refer to relevant certificates

## DIRECT AIRBORNE SOUND INSULATION

Tests have been done to determine the sound reduction index of PRS FireBoard in accordance with BS EN ISO 10140-2:2010.

The results below are expressed as a single-number rating  $R_w$  in accordance with EN ISO 717-1:2013.

Direct airborn sound insulation test results on 9 mm, 12 mm and 20 mm thick panels:

Thickness (mm)	$R_w$ (C;Ctr) (dB)
9	28 (-1;-2)
12	29 (-2;-2)
<b>18</b>	31 (-2;-2)

## PHYSICAL & CHEMICAL PROPERTIES

Appearance	Solid flat sheet board
Odour	Odourless
Change of State	White
Vapour Resistance	0.31 MNs/g (EN ISO 12572)
Melting point	2400°C
Spontaneous ignition	N/A
Oxidising properties	N/A
Density	1100 g/m <sup>3</sup>
Solubility	Insoluble in Water
Ignitability	N/A
Explosion hazard	N/A
Vapour pressure	N/A
pH level	7.5

## STABILITY AND REACTIVITY

Special physical conditions to be avoided	None
Incompatible Materials	Not Known
Hazardous Decomposition	None
Reaction to Frost	Freeze/thaw resistant
Reaction to Moisture	Breathable and water-resistant. Passage of moisture does not affect its structure
Reaction to Insects/Rodents	Unattractive to insects and rodents

## AXIAL LOADING PULL THROUGH

EAD 030351-00-0402:2019 annex A2

Test specimen	Axial load [N]	
	472 A (9 mm)	472 B (12 mm)
1	859	1308
2	799	1347
3	852	1090
4	911	1056
5	885	1115
6	870	1025
7	842	1098
8	818	1143
9	864	1171
10	942	1279
<b>Mean value (m)</b>	<b>864</b>	<b>1163</b>
Standard deviation s ( $\sigma$ (n-1))	42	111
5%-fractile ( $k_n = 1,92$ )	783	950
Failure mode	pull through	pull through

## SERVICE LIFE PREDICTION

The Service Life Prediction of an example timber frame structure built with the Product has been determined according to ISO 15686-1 and ISO 15686-2.

The result of the analysis is a **Service Life Prediction of 54 to 66 years.**

## CUTTING




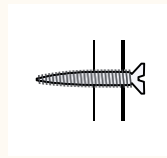
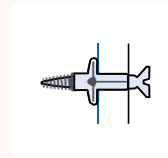
PRS FireBoard is easily cut to size using the score and snap method using a utility knife. Mark the area out with a pencil and straight edge ensuring the reinforcing mesh is cut through. PRS FireBoard can also be cut with a disc saw or hand saw; please see PRS FireBoard COSHH sheet for more details.

## ADHESIVES, SEALANTS AND FIXINGS

The maximum admissible loads on different hooks and fasteners are given in Table 1.

Maximum admissible loads (kN) on different hooks and fasteners\*

**Table-1** \*Maximum loads are subject to the quality of the fixing

Board Thickness	Nailed picture hooks			5mm diameter Continuous thread screw	Toggle bolt
					
9mm	20kg	18kg	5kg	20kg	40kg
12mm	25kg	23kg	10kg	25kg	45kg

Different loads may be Fixed to PRS FireBoard using suitable fixings. Lightweight objects can be hung with good quality picture hooks fixed directly into the board.

Depending on the method of attachment, various vertical loads can be supported by PRS Fireboard. Shelving and hanging cupboards can be attached with suitable cavity fixings. The choice of fixing method will be governed by the weight and dimensions of the object.

Loads with a weight of less than 20kg per fixing point can easily be fixed to the wall with suitable screws, and 40kg using suitable toggle fixings, without the need for support noggins.

Any two points of attachment must have a minimum distance of 150mm, otherwise the weight of the load to be supported must be halved. Heavy loads such as sinks, sanitary units, radiators and heavy cabinets should be fixed to the sub straight of the wall or supporting noggins.

When fixing PRS Fireboard, screws should have a thread the whole length of the shank for maximum strength and resistance.

The length of fixings depends on national regulations and applications. As a guide, the fixing should be a minimum of 28mm plus the thickness of the board

For standard drywall applications, galvanised or phosphate coated screws or nails along with jointing and taping. For fire resistant applications an intumescent sealant must be used.

When plastering or finishing, PRS FireBoard is a high suction surface and any finish can be applied to either face of the board. Please refer to and follow the plaster manufacturer's application instructions for guidance to suit your site conditions and preparation requirements.

## TESTING LIBRARY

- EN 13501-1:2007+A1:2009
- ETAG 006, D2.1 AXIAL Loading
- BS EN 594-2011
- EAD 030351-00-0402:2019 Annex A2: Axial Loading
- EAD 19-21-0142-0303 annex B, Clause 3B Determination of Mechanical Strength
- EAD 19-21-0142-0303 annex B, clause B5 Mechanical Strength subject to positive load
- EN-ISO 178:2010 Three point bending
- EN-ISO 824:2013 Squareness
- EN ISO 12572:2016 Vapour permeability
- EN 1604:2013 Dimensional stability
- TR 001:2003 Soft body impact
- TR 001:2003 Hard body impact
- EN-ISO 12571 Moisture absorption, Hygrothermal performance and determination of Hygroscopic sorption properties
- BS EN ISO 1716:2010
- BS EN ISO 1182-2010
- BS 476: Part 22: 1987
- BS 476: Part 22: 1987 For Single or Double Skin Spandrel Panel
- BS 476: Part 22: 1987 For Partition Walls
- BS 476: Part 22: 1987 For Timber Frame Panel Walls
- EN ISO 1217 Bunch Nielsen Institute of Building Physics
- Directive 67/548/EEC and Regulation (EC) no 1272/2008 no dangerous substances
- ISO 15686-1 Buildings and Constructed assets - Service Life Planning - part 1: General principles and framework
- ISO 15686-2 Buildings and Constructed assets - Service Life Planning - Part 2 Service Life Prediction Procedures
- EN 335-1:2006 Resistance to Biological Agents.
- EN 335-1 Durability of Wood-Based products - Definition of use Classes - Part 1: General
- Report no. 5620-20 Investigation of Board "PRS FireBoard", Bunch Byggningsfysik Aps, 2018-10-29
- Kiwa BDA Calculation of expected Service Life (ESL) according to ISO 15686, 2020-03-23

# EXAMPLES OF TESTED APPLICATION

Figure 1 - External Wall Construction

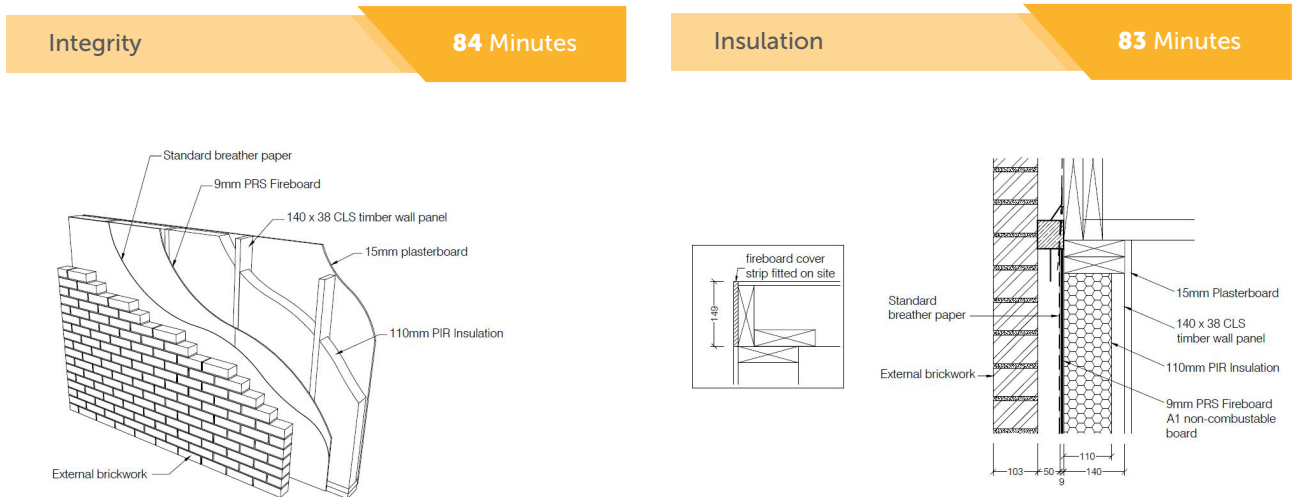
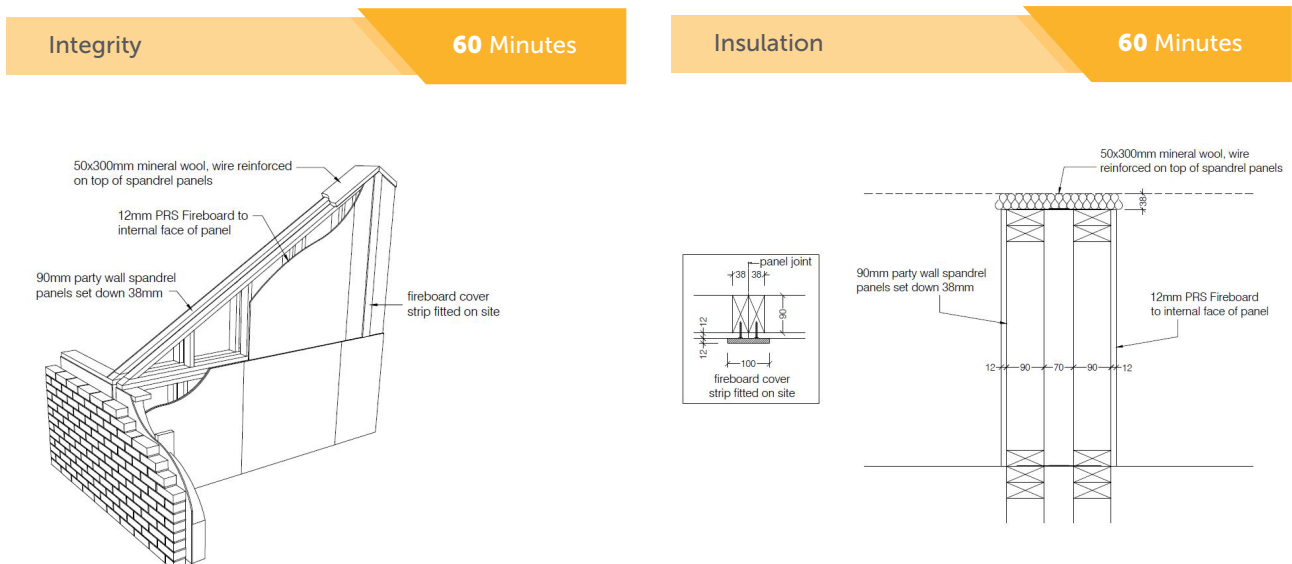


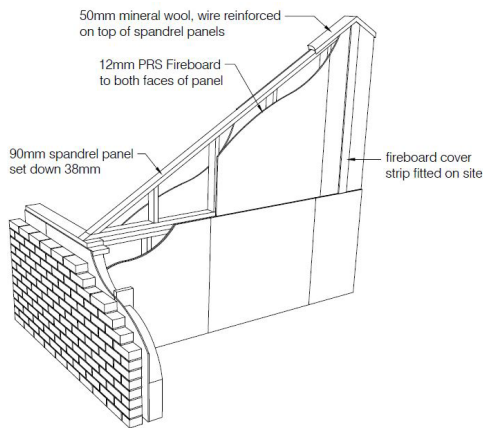
Figure 2 - Party Wall / Double Spandrel Detail



## EXAMPLES OF TESTED APPLICATION

Figure 3 - Party Wall Single Spandrel

**Integrity** **60 Minutes**



**Insulation** **60 Minutes**

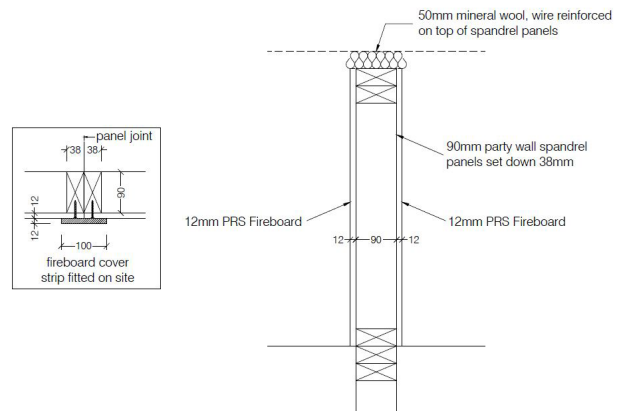
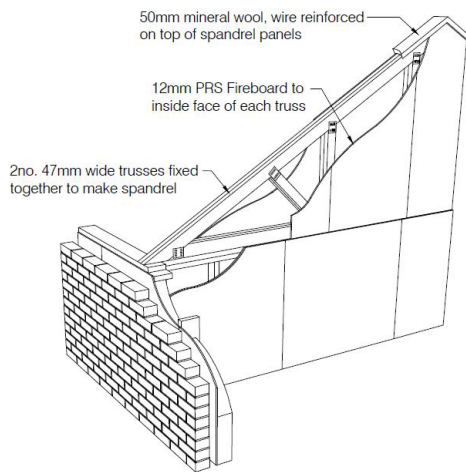
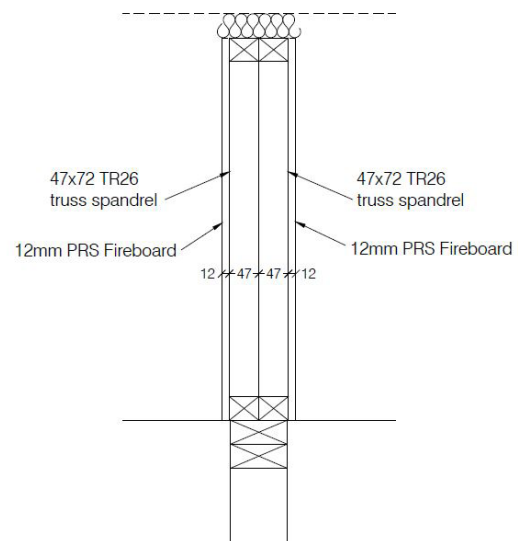


Figure 4 - Double 47mm Spandrel

**Integrity** **60 Minutes**



**Insulation** **60 Minutes**



## EXAMPLES OF TESTED APPLICATION

Figure 5 - Timber Partition Wall Panel Construction

**Integrity** **30 Minutes**

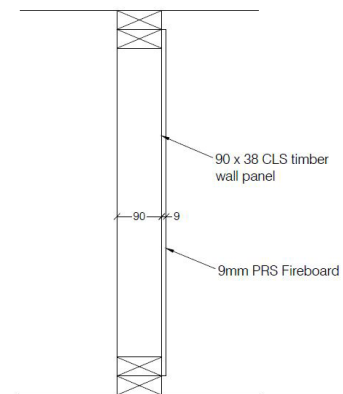
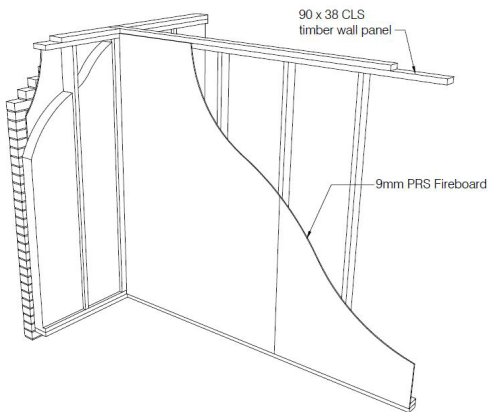
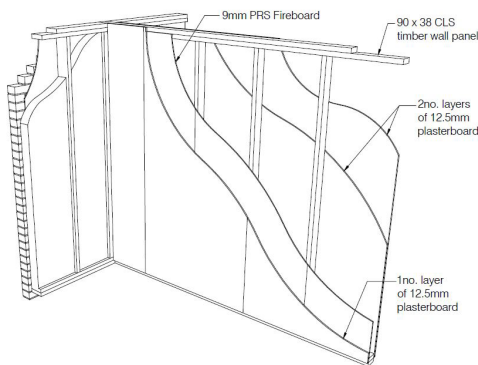


Figure 6 - Fire Protection During and After Construction

**Integrity** **30-116 Minutes**



**Insulation** **30-115 Minutes**

