

Frame Protection System Ltd (FPS)

TECHNICAL MANUAL - FPS® Weathertight® System

(Version 1.2) April 2021



1. Version Table

Version number	Purpose / Change	Author	Date
1.0	Approved final version		
1.1	Final Version April 2021	Grant & Gwyn	13/4/2021



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The Frame Protection System (FPS® Weathertight® System)

The FPS® Weathertight® System was developed to protect and maintain roof and wall framing and elements from; (a) the weather during construction and, before final cladding installations were complete, (b) during the “drying period” immediately after the building has been completed and, (c) for the reasonable life span of the occupied building. The FPS® Weathertight® Systems main functions are to prevent weather and air moisture through the wall and roof elements and allow optimum moisture vapour flows to the outside.

In developing the FPS® Weathertight® System, consideration was given to; local climatic conditions, building physics, design, material usage and building methodology.

To meet these conditions, components that meet EU (CE marking), BBA, BRE and IAB certification have been sourced and in combination provide a high performance “system”.

The FPS® Weathertight® System must be installed in accord with the FPS® Weathertight® System Roof or FPS® Weathertight® System Wall Installation Manuals.

FPS® Weathertight® System CodeMark Certificate No: CM70030 is supported by robust Manufacturer and, FPS® warranties, and Frame Protection System Ltd Quality Plan.

FPS® Weathertight® System - Scope of Use, Condition & Limitation

The FPS® Weathertight® System consists of a range of high performance, 3 layer, non-absorbent, water tight, air tight, vapour open, fire retardant, flexible wall and roof membrane/underlays, and associated components.

The FPS® Weathertight® System is an membrane/underlay for roof and wall application, that when installed to compliant timber and steel framing, sarking complies with NZS3604:2011, 10.4.4; sheet materials including OSB that complies with BS EN 300:2006, particleboard that complies with AS/NZ 1859:2017 and plywood that complies with AS/NZS2269:2012; and applied over approved RAB systems FPS® Weathertight® System membrane/underlay provides both:

- (a) Interim weather protection to the construction, for up to 90 days, before final claddings must be installed, allowing interior works to proceed to completion, provided the FPS® Weathertight System checklist is completed in full and the Moisture Test© complies with Table 4, NZS 3604: 2003 and Conversion Tables specific to LVL timber.
and;
- (B) Long term weathertightness and interstitial moisture management contributes to the interior dry roof and wall construction elements.

NZ Building Code Compliance







B2 Performance Clauses	
B2.3.1 (a), (ii), (iii)	FPS membrane/underlay all have a 5-year manufacturer warranty for manufacturing defects, and an FPS/certification for the reasonable life and use of the building.
B2.3.2 (a)	FPS products and components are tested for System compatibility and durability.
C3 Performance Clauses	
C3.4 (c)	FPS membrane/underlay all have an AS 1530 - 1993 Part 2 flammability index of not greater than 5 and therefore meet the requirements of NZBC Acceptable Solutions C/AS2 to C/AS6, Paragraph 4.17.8 b) for suspended flexible fabric used as an underlay to exterior cladding that is exposed to view in occupied spaces. All FPS membrane/underlays may therefore be used with no restrictions in all buildings.
E2 Performance Clauses	
E2.3.1	FPS membrane/underlay are all certified waterproof, will not wick moisture and have sufficient strength to sustain reasonable snow falls.
E2.3.2	FPS membrane/underlay are all certified waterproof and will not wick moisture.
E2.3.3	FPS membrane/underlay are all non-absorbent and will not wick moisture.
E2.3.5	FPS membrane/underlay are all certified waterproof and will not wick moisture. FPS will not allow direct fixed claddings and therefore require a cavity.
E2.3.6	FPS membrane/underlay are all certified as vapour open under British and European classifications.
E2.3.7 (b)	FPS membrane/underlay can all be installed at the earliest opportunity, and correct installation is verified by the FPS Checklist.
E3 Performance Clauses	
E3.3.1	FPS membrane/underlay all assist in keeping insulation dry and therefore meet functional requirements E3.2 (a) & (c).
F2 Performance Clauses	
F2.3.1	FPS membrane/underlay are all inert and do not shed any liquid, dust or particles at any time.
H1 Performance Clauses	
H1.3.1 (b)	FPS membrane/underlay are all certified airtight and installed to prevent wind ingress.
H1.3.3 (c), (e)	FPS membrane/underlay are all certified airtight and weathertight.

Requirements of FPS® Weathertight® System

1. Timber construction shall be in accordance with NZS 3604 or to Specific Engineer Design
2. Light gauge steel framing shall be in accordance with NASH Standard Part 2 or to Specific Engineer Design
3. FPS® Eurotop membrane/underlay must not have roofing or wall cladding systems direct fixed.
4. The FPS® Weathertight® System, Eurotop membrane/underlay cannot be mixed with foreign underlays on the same roof or wall. Except where the system is being used on an extension or alteration of an existing building.
5. FPS® Weathertight® System components must always be used, and no substitution is permitted.
6. All penetrations of the membrane/underlay in both roof and wall situations must be flashed and/ or sealed as detailed in accordance with the FPS® Weathertight® System Roof or FPS® Weathertight® System Wall Installation Manuals.
7. All FPS® Weathertight® System membrane/underlays may be exposed to the weather elements for 90 days from installation date. Note: Once installation has commenced, completion must be in a timely manner. Wall Cladding Must be installed prior to the 90 day period expiring.
8. All gaps around joinery units should be made wind and watertight. Refer to the FPS® Weathertight® Installation Manual or joinery manufacturers installation requirements.

FPS® Weathertight® System “Early Close-in” System (ECS)








All FPS membrane/underlay have been independently tested, for performance in the following essential parameters:

-  Class W1 Waterproof
-  LR Vapour (Open) Permeability
-  Airtightness
-  Wind resistance
-  UV exposure 90 Days
-  Tensile strength

The System, when installed correctly, will provide Weathertightness to the building, allowing internal work to continue to completion before final claddings are completed.

Other major benefits include:

-  Ease of handling and installation

-  Fixings are an approved part of the system
-  Installation can take place on very wet timber
-  Provides quick coverage of the building
-  No harmful health effects
-  Unaffected by timber treatments, oils and detergents
-  Non-absorbent - No wicking or tent effect
-  Fire retardancy

Roof Membrane/Underlay Technical Specifications

Technical Parameters	Eurotop N15	Eurotop N35	Eurotop W35	Eurotop S65
Base Weight	115	135	140	165
Roll Size (L x W = M²)	50 x 1.5 = 75m ²	50 x 1.5 = 75m ²	50 x 2.75 = 137.5m ²	50 x 1.5 = 75m ²
Vapour Permeability				
Sd	0.004	0.007	0.020	0.020
MNs/g	0.02	0.035	0.1	0.1
Absorbency	Nil	Nil	Nil	Nil
Water Tightness				
Hydrostatic Pressure	1500mm	5500mm	2250mm	2500mm
Waterproof	Class W1			
Mechanical Strength				
Tensile MD (N/50mm)	230	280	290	350
Tensile CD (N/50mm)	150	190	200	240
Tear MD (N)	120	180	140	230
Tear CD (N)	160	130	150	300
Wind Pressure Resistance	BRETR301-688			
UV Exposure (days)	90	90	90	120
Fire Properties				
Fire Retardance	Less than 3			
Fire Rating (BCA Group)	Group 1			
Airtightness	≤0.10 (m ³ /m ² .h ⁻¹ .50Pa ⁻¹)			
m ³ /m ² .h ⁻¹ .50Pa ⁻¹				
Durability	To comply with the New Zealand Building Code			
Operating Temp	-40° to +120°	-40° to +120°	-40° to +80°	-40° to +120°
Cavity	No Direct Fixing of Cladding			
Material	Polypropylene			

Refer to FPS re application

Wall Membrane/Underlay Technical Specifications

Technical Parameters	Eurotop N15	Eurotop N35	Eurotop W35	Eurotop S65
Base Weight	115	135	140	165
Roll Size (L x W = M ²)	50 x 1.5 = 75m ²	50 x 1.5 = 75m ²	50 x 2.75 = 137.5m ²	50 x 1.5 = 75m ²
Permeability				
Sd	0.004	0.007	0.020	0.020
(g/m ² /24h)	2800	2900	2300	2300
MNs/g	0.02	0.035	0.1	0.1
Absorbency	Nil	Nil	Nil	Nil
Water Resistance				
Hydrostatic Pressure	1500mm	5500mm	2250mm	2500mm
Waterproof	Class W1			
Airtightness				
Mechanical Strength				
Tensile MD (N/50mm)	230	280	290	350
Tensile CD (N/50mm)	150	190	200	240
Tear MD (N)	120	180	140	230
Tear CD (N)	160	130	150	300
Wind Pressure Resistance	BRETR301-688			
UV Exposure (days)	90	90	90	120
Fire Properties				
Fire Retardance	Less than 3			
Fire Rating (BCA Group)	Group 1			
Airtightness	≤0.10 (m ³ /m ² .h ⁻¹ .50Pa ⁻¹)			
Durability	To comply with the New Zealand Building Code			
Operating Temp	-40° to +120°	-40° to +120°	-40° to +80°	-40° to +120°
Cavity	No Direct Fixing of Cladding			
Material	Polypropylene			

Refer to FPS re application

Fixings

Fixing Equipment and Methods			
Timber	Stinger CH38	Manual Feed Gun	Stinger 9.5mm Staple
	Stinger CH38A	Auto Feed Gun	Stinger 9.5mm Staple
	Stinger CH58	Pneumatic Staple Gun	Stinger 16mm Staple
	Nail or Screwed Cavity Battens		
Steel	Caps and Self Taping Screws		
	Screwed Cavity Battens		

Fixing Spacings for Walls

Wind Zone	Cavity Batten	Wooden Frame no Battens	Steel Frame no Battens	SIPs or Other Solid Backing no Battens
Low	Nail or Screw	Cap & 9.5mm Staple 300mm	Cap & Screw 300mm	Cap & 9.5mm Staple 400mm Random
Medium	Nail or Screw	Cap & 9.5mm Staple 250mm	Cap & Screw 300mm	Cap & 9.5mm Staple 350mm Random
High	Nail or Screw	Cap & 9.5mm Staple 200mm	Cap & Screw 300mm	Cap & 9.5mm Staple 300mm Random
Very High	Nail or Screw	Cap & 9.5mm Staple 150mm	Cap & Screw 250mm	Cap & 9.5mm Staple 250mm Random
Extra High*	Nail or Screw	Cap & 9.5mm Staple 100mm 16mm Staple 250mm	Cap & Screw 250mm	Cap & 9.5mm Staple 200mm Random 16mm Staple 400mm Random
Specific Design*	Nail or Screw	Cap & Staple 16mm Staple 150mm	Cap & Screw 200mm	Cap & Staple 16mm Staple 300mm Random

* FPS® Weathertight® System membrane/underlay are tested for wind durability and airtightness and able to be installed on walls without a rigid air barrier in Extra High and SED wind zones provided the specifications for membrane/underlay selection.

Approved Tapes

Where flexible flashing tapes are required, they must comply with the requirements of E2/AS1. Please contact FPS for further information about approved tapes.

Penetration Seals

Part Code	Size mm	Fits Conduit
FPS CS 15	100 x 100	15 to 30 mm
FPS CS 28	100 x 100	28 to 40 mm
FPS CS 38	100 x 100	38 to 55 mm
FPS CS 48	150 x 150	48 to 75 mm
FPS CS 74	150 x 150	74 to 95 mm
FPS CS 95	200 x 200	95 to 120 mm
FPS CS 120	200 x 200	120 to 145 mm
FPS CS 145	250 x 250	145 to 165 mm

Wind Zone Membrane/Underlay Selection

Roof underlay with sealed overlaps and counter battens

Wind Zone	Truss 400 Centres	Truss 600 Centres	Truss 900 Centres	Truss 1200 Centres	SIPs or CLT Solid Backing
Low	N15	N15	N15	N35	N15
Medium	N15	N15	N35	S65	N15
High	N15	N35	S65	-	N15
Very High	N15	S65	-	-	N35
Extra High	N35	S65	-	-	N35
Specific Design*	S65	-	-	-	S65

* Consult Frame Protection System

Wall Underlay

Wind Zone	Timber & Steel Frame	SIPs or CLT Solid Backing
Low	W35/N15	W35/N15
Medium	W35/N15	W35/N15
High	W35/N35	W35/N15
Very High	W35/N35	W35/N15
Extra High*	W35/N35	W35/N35
Specific Design*	W35/N35	W35/N35

* FPS® Weathertight® System membrane/underlay are tested for wind durability and airtightness and able to be installed on walls without a rigid air barrier in Extra High and SED wind zones provided the specifications for membrane/underlay selection.

Manufacturer Product Warranty

1. In accordance with the terms set out below FAKRO Sp. z o.o. hereby grants FPS the Warranty for membranes/underlays, Eurotop N35 (product code 62035), Eurotop S4 (product code 62036), Eurotop N15 (product code 62038), Eurotop S65 (product code 62039) and the water vapour control layer Eurotop Activ V110 (product code 80AB07) to be used as part of a “frame protection system” of buildings according to the FPS Technical and Installation Manuals, and hereby guarantees that the membranes (membrane is referenced as the same as underlay) will fulfil their function for a period of five (5) years from the date of purchase by the Buyer but not longer than a period of six (6) years from the date of manufacture, provided that the membranes are installed in accordance with the supplied Instructions valid at the time of purchase.
2. In the case of any defects in the Membrane/underlay, which become apparent during the warranty period, FAKRO Sp. z o.o will, at the request of Frame Protection System Ltd (FPS), provide new defect-free membrane/underlays with the same parameters as the originally purchased product. Reimbursement of any costs will be at the discretion of Fakro and FPS.
3. On the basis of this Warranty the end user shall not acquire any rights or claims other than those expressly conferred in this Warranty. The liability under this Warranty covers only membrane/underlay manufacturing and performance defects. This Warranty is not responsible for any defects resulting from acts or omissions of a third party by poor workmanship, incorrect handling, storage, installation or as a result of force majeure or negligence.
4. FAKRO Sp. z o.o will fulfil its obligations in accordance with Section 2 above provided that a person authorized by FAKRO Sp. z o.o. confirms that:
 - (a) Membrane/underlay ceased to fulfil its function as a result of hidden manufacturing defects; and that:
 - (b) Installation and use of the Membrane/Underlay complies with all the requirements as set out in the FPS® Weathertight® System Roof or FPS® Weathertight® System Wall Installation Manual Instructions valid on the date of purchase.
5. If a person authorized by FPS finds any of the conditions set out in Section 3 & 4 above have not been satisfied, the End User shall not be entitled to the rights deriving from this Warranty. The End User shall have the right to request an independent expert examination of the membrane/underlay. The End User shall bear the costs of such examination. The End User will be reimbursed for the cost of the independent expert examination if it proves conclusively that there are grounds for execution of the Warranty rights as specified in Section 3 & 4 above.
6. The End User may submit claims under this Warranty to FPS who in turn will seek a resolution with Fakro in accordance with Agreements between the FPS and Fakro. The time limit for determination of the claim is up to 30 working days from the date of filing the claim. If FPS recognizes the validity of the warranty claim, replacement products in accordance with Section 2 of the warranty will be delivered to the FPS together with the next order placed under the Distribution Agreement.
7. This Warranty is granted exclusively to FPS, who in turn guarantees the product to third parties, and will be the only entity responsible towards the third party. The scope of any guarantee given by FPS to third parties must comply with the requirements and rights stipulated in this Warranty. Any rights granted by FPS to third parties beyond the scope of this Warranty shall become the sole responsibility of FPS and FAKRO Sp. z o.o. will not be responsible for those additional conditions.

Frame Protection System Product Warranty

Frame Protection System Product Warranty is as per the terms and conditions of Frame Protection System Ltd.