
PRODUCT CERTIFICATE

NAME OF PRODUCT

BOOST[®] HYBRID
BOOST[®] HYBRID ROOF

MANUFACTURER

ACTIS SA
Avenue de Catalogne
11300 Limoux
France



PRODUCT DESCRIPTION

BOOST[®] HYBRID and BOOST[®] HYBRID ROOF breather membranes are water vapour permeable roofing and wall underlays, which act also as a wind barrier and complementary insulating material due to their thermal performance.

The products consist of a watertight metal coated surface membrane and core made of layered polyester fibre wadding and perforated metal coated polyolefin films with or without reinforcement. BOOST[®] HYBRID has a reflective outside membrane. The outer side of BOOST[®] HYBRID ROOF is black and the surface is non-reflective.

BOOST[®] HYBRID is typically used as a breathable wall underlay. The product can be installed in contact with thermal insulation or with a non-ventilated air gap between BOOST[®] HYBRID and thermal insulation. The space between BOOST[®] HYBRID and outer cladding must be ventilated.

BOOST[®] HYBRID ROOF is typically used as roof underlay on pitched roofs with continuous or discontinuous roofing. The space between BOOST[®] HYBRID ROOF and roofing surface material must be ventilated. The underlay can be installed in contact with thermal insulation or with a non-ventilated air gap between BOOST[®] HYBRID ROOF and thermal insulation.

The width of the products is 1,5 m and the thickness 35 mm. The product is delivered in rolls covering 10 m².

BOOST[®] HYBRID is available with or without a built in self-adhesive flap, which facilitates sealing of joint between adjacent sheets.

Manufacturer has CE-marked the products according to EN 13859-1 and EN 13859-2.

CERTIFICATION PROCEDURE

This certificate is based on Eurofins Expert Services Oy certification criteria SERT R007 including initial type assessment of the product, initial inspection of the factory and the factory production control and continuous surveillance. The general certification procedures are based on the certification system of Eurofins Expert Services Oy.

The conditions of validity of this certificate are described in section 15.

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REGULATIONS, STANDARDS AND INSTRUCTIONS

1 Regulations

In the opinion of Eurofins Expert Services Oy, BOOST^R HYBRID and BOOST^R HYBRID ROOF, if used in accordance with the provisions of this certificate, will contribute to meet the relevant requirements of the Finnish building legislation as stated in the following:

782/2017 Ministry of the Environment *Decree on the moisture performance of buildings:*

The requirements given in Finnish national decree 848/2017, Decree on the fire safety of buildings, shall be attested case-by-case basis, taking into account the properties and the use of the building. Reaction to fire characteristics of BOOST^R HYBRID and BOOST^R HYBRID ROOF have not been determined.

Finnish national decree 745/2017, *Decree on the structures and fire safety of small chimneys*, gives requirements for insulation of chimney penetrations. In this certificate, installation details for chimney penetrations are not presented.

Since the regulations are not harmonised, the user is recommended to consider separately the relevant national regulations regarding the intended use.

2 Standards and instructions

EN 13859-1 Flexible sheets for waterproofing. Definitions and characteristics of underlays. Part 1: Underlays for discontinuous roofing

EN 13859-2 Flexible sheets for waterproofing. Definitions and characteristics of underlays. Part 2: Underlays for walls

EN 16012 Thermal insulation for buildings. Reflective insulation products. Determination of the declared thermal performance.

PRODUCT INFORMATION

3 Product description, marking and quality control

BOOST^R HYBRID and BOOST^R HYBRID ROOF are multilayer breather membranes and thermal insulation products with reflective or non-reflective surface layer.

Product dimensions are:

Property	BOOST ^R HYBRID BOOST ^R HYBRID ROOF
Thickness	35 mm
Weight	650 g/m ²
Roll length	6,7 m
Width	1500 mm

Internal quality control consists of process control, control of raw materials, visual inspection of the product and control weight per square meter, tensile properties, emissivity and water vapour control of the final product.

External quality control is carried out according to the contract on quality control between the manufacturer and Eurofins Expert Services Oy.

4 Delivery and storage on site

The product is delivered to site in rolls wrapped in plastic. The product is labelled with the product name, the name of the manufacturer, the dimensions of the product and manufacturing date.

The product shall be stored in clean and dry conditions in such a way that dirt and dust cannot adhere to the product surfaces. The product shall be protected from being dropped or crushed. It shall also be protected from sunlight exposure, direct heat sources, sparks and open flames, and it shall be stored away from flammable materials, e.g. solvents.

DESIGN INFORMATION

5 General

The design information given in this certificate is based on the assumption that the structural solutions, fastening methods and other initial data are accordant to this certificate and the given requirements, instructions and standards are followed.

6 Installation

BOOST[®] HYBRID and BOOST[®] HYBRID ROOF shall be installed horizontally according to the instructions of the manufacturer (Figure 1). Installation can be performed in ordinary temperature conditions for building works.

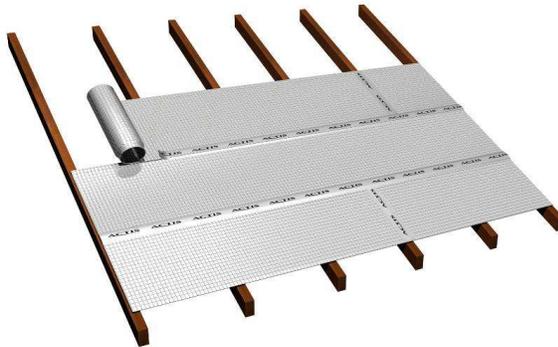


Figure 1. Example of horizontal installation of BOOST[®] HYBRID and BOOST[®] HYBRID ROOF

The maximum span between supports onto which the underlay shall be fastened is c/c 600 mm. All roofing underlay joints shall have an overlapping of at least 100 mm in roofs with slope 1:3 or more and 200 mm in roofs with slope below 1:3. All roofing underlay joints must be sealed with a tape delivered together with the underlay (reflective tape to be used for BOOST[®] HYBRID). The joints around openings such as roof windows and ventilation pipes shall be carefully sealed with adhesive tape to guarantee the tightness of the underlay. The underlay must not be in contact with a chimney. Finnish national decree 745/2017 defines distances from chimney's external surface that shall be made using only reaction to fire class A1 building materials.

The underlay is installed with the perforated side facing inwards and the watertight breather membrane facing outwards. The underlay is fastened with corrosion protected staples or nails. For BOOST[®] HYBRID and BOOST[®] HYBRID ROOF the staples should have a minimum length of 14 mm. For wall applications the length of staples should be chosen in regard to the support thickness. The back width of 10 mm is usually used but it could vary relating to the stapler model. Maximum staple distance along the edges is 100 mm. After stapling the overlaps must be covered by ACTIS adhesive tape so that it covers the staples for ensuring a hermetic seal or the joint is sealed with integrated flap (see Figure 2).

Intermediate supports or noggins between rafters are advised to be used in installation. The underlay should be stapled at 50 mm intervals to the intermediate support.

To ease the fixation of the intermediate batten between the rafters an adapted batten support (see Figure 3) is recommended to be used. The batten section could be up to 40x40 mm. The supports are easily fixed by corrosion resistant staples between two rafters with a maximum spacing of 900 mm.

The product may also be used under tiles supported on OSB sarking boards.

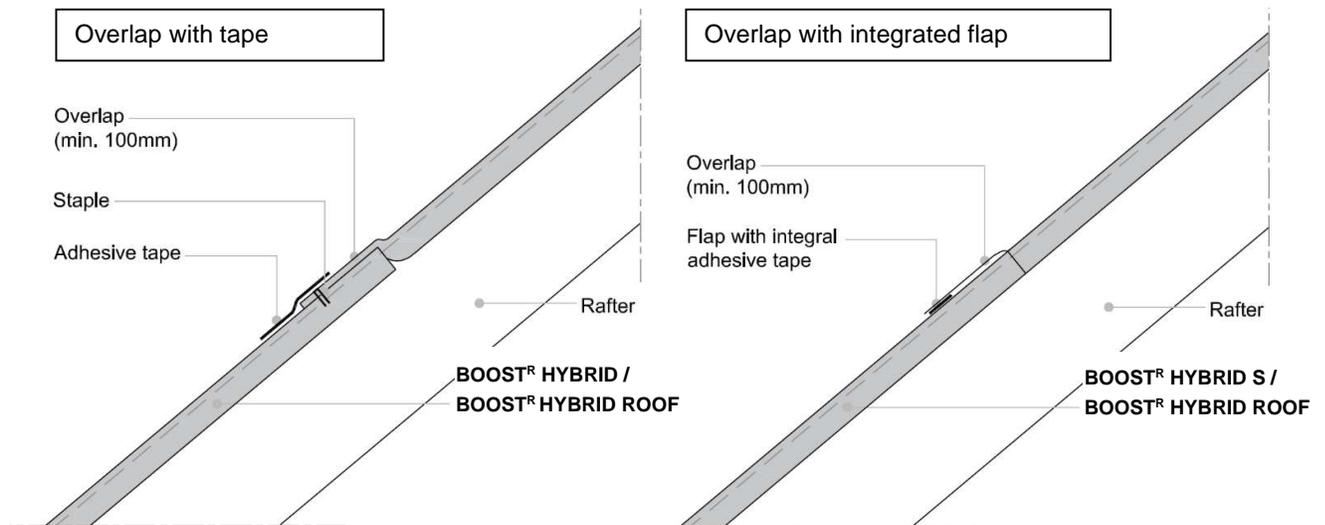


Figure 2. Overlaps



Figure 3. ACTIS intermediate batten support

7 Structural performance

BOOSTR HYBRID and BOOSTR HYBRID ROOF are non-load bearing products. They will resist normal loads associated with installation and use. The products do not withstand walking-related loads.

The resistance to wind load of the roofing underlay has not been evaluated, because the product is installed below the outer roof covering.

8 Performance in relation to moisture

BOOSTR HYBRID and BOOSTR HYBRID ROOF are water vapour permeable. The water vapour permeability of the products is presented in Table 2.

The structures including BOOSTR HYBRID or BOOSTR HYBRID ROOF shall be designed so that the requirements of the Finnish national regulations 782/2017, concerning air and water vapour tightness of the structures, are fulfilled.

9 Performance in case of fire

Finnish national decree 848/2017, Decree on the fire safety of buildings, gives requirements for fire safety of buildings and building products.

Reaction to fire class of BOOSTR HYBRID and BOOSTR HYBRID ROOF has not been determined.

The installation of BOOST^R HYBRID and BOOST^R HYBRID ROOF must not be carried over junctions between roofs and compartment walls requiring minimum period of fire resistance. A safe distance from a chimney or flue must be made using reaction to fire class A1 material as given in the Finnish national decree 745/2017.

10 Thermal insulation performance

The thermal performance and outer surfaces emissivity of BOOST^R HYBRID has been determined according to standards EN ISO 8990 and EN 16012. Thermal resistance for wall and roof constructions have been calculated according to standard EN ISO 6946. The results are given in Table 1.

Table 1. Thermal performance of BOOST^R HYBRID and BOOST^R HYBRID ROOF

Characteristics	Product	Roof slope	Air cavities of at least 20 mm inner / outer	Unit	Value
Declared emissivity (outer / inner side)	BOOST ^R HYBRID				0,31/0,05
	BOOST ^R HYBRID ROOF				0,9/0,05
Declared R-value	Core R-value of BOOST ^R HYBRID and BOOST ^R HYBRID ROOF			m ² K/W	1,35
Thermal resistance	BOOST ^R HYBRID		unventilated /well-ventilated	m ² K/W	2,15
			unventilated / slightly ventilated		2,26
	BOOST ^R HYBRID ROOF	0°	unventilated /well-ventilated	m ² K/W	1,91
			unventilated / slightly ventilated		1,94
		10°	unventilated /well-ventilated	m ² K/W	1,92
			unventilated / slightly ventilated		1,96
		20°	unventilated /well-ventilated	m ² K/W	1,95
unventilated / slightly ventilated	1,98				
30°	unventilated /well-ventilated	m ² K/W	1,97		
	unventilated / slightly ventilated		2,00		
45°	unventilated /well-ventilated	m ² K/W	2,00		
	unventilated / slightly ventilated		2,03		

The ultimate thermal performance of the product will depend on the construction of the roof or wall on which it is installed. It may be necessary to combine BOOST^R HYBRID or BOOST^R HYBRID ROOF with other insulation products to achieve the design U-value required.

Calculations of the thermal transmittance (U-value) of specific wall or roof constructions incorporating BOOST^R HYBRID or BOOST^R HYBRID ROOF insulation should be carried out in accordance with EN ISO 6946 and using the values given in Table 1.

When compressed between rafters/studs and battens, the compressed nominal thickness of BOOST^R HYBRID and BOOST^R HYBRID ROOF has been determined as 7 mm. Manufacturer has determined thermal conductivity of the product The related R-value of the 7 mm compressed product is 0,22 m²K/W (determined by the manufacturer in accordance with EN 12667).

11 Durability

When installed as specified, BOOST^R HYBRID and BOOST^R HYBRID ROOF will have a working life equivalent to that of the structure in which it is incorporated.

Ageing behaviour of BOOST^R HYBRID and BOOST^R HYBRID ROOF has been tested according to the requirements of the standard EN 13859-1, "Flexible sheets for waterproofing. Definitions and characteristics of underlays. Part 1: underlays for discontinuous roofing". The results are given in Table 2.

INSTRUCTIONS FOR INSTALLATION AND USE

12 Manufacturer's instructions

Installation is performed according to the manufacturer's installation instructions.

TECHNICAL SURVEY

13 Initial assessment

Eurofins Expert Services Oy has performed evaluation based on manufacturer's documentation, test results and calculations. The results are presented partly in the text and partly in Table 2.

Table 2. Characteristics of BOOST[®] HYBRID and BOOST[®] HYBRID ROOF

PROPERTY	TEST METHOD	UNITS	RESULT
Thickness (25 Pa load)	EN 823	mm	35
Weight/m ²	EN 1849-2	g/m ²	650
Length	EN 1848-2	m	6,7
Width		m	1,5
Declared thermal performance			
R-value of BOOST [®] HYBRID and BOOST [®] HYBRID ROOF	EN 16012	m ² K/W	See Table 1
R-value of material			1,35
Declared emissivity (outer/inner side): BOOST [®] HYBRID BOOST [®] HYBRID ROOF			0,31/0,05 0,9/0,05
Tensile strength*			
Longitudinal direction	EN 12311-1, EN 13859-1 Annex C	N/50mm	> 300
Transversal direction		N/50mm	> 150
Elongation (longitudinal)		%	> 15
Elongation (transverse)		%	> 10
Resistance to tearing, nail shank*			
Longitudinal direction	EN 12310-1, EN 13859-1 Annex B	N	> 150
Transverse direction		N	> 150
Joint strength	EN 12317-2	N/50mm	55
Water vapour transmission*			
Permeability (W)	EN 12572 set C	kg/m ² sPa	1,6·10 ⁻⁹
Vapour resistance (Z)		MNs/g	0,6
Diffusion eq. air layer thickness (s _d)		m	0,11
Watertightness*	EN 1928 method A	-	Watertight, W1
Air permeability	EN 12114 (50 Pa)		0,017
Flexibility at low temperature*	EN 1109	°C/Ø mm	-30°/30 mm
Dimensional stability	EN 1107	%	< 1%
Reaction to fire*			No performance determined
After ageing			
Tensile strength*			
Longitudinal direction	EN 12311-1 and EN 13859-1/2 Annex A	N/50 mm	545
Transverse direction		N/50 mm	250
Elongation (longitudinal)		%	> 20
Elongation (transverse)		%	> 10
Watertightness*	EN 1928 method A		Watertight, W1

* Declared by the manufacturer in declaration of performance, DoP

VALIDITY OF THE CERTIFICATE

14 Validity period of the certificate

This certificate is valid until December 13, 2023.

The validity of the certificate may be confirmed at Eurofins Expert Services Oy home pages.

15 Conditions of validity

The certificate is valid assuming that no fundamental changes are made to the product, and that the manufacturer has a valid contract on quality control.

16 Other conditions

The references made in this certificate to standards and instructions are valid in the format used at the time the certificate was signed.

The recommendations in this certificate concerning the safe use of this product are minimum requirements that shall be satisfied when using the product. The certificate does not override current or future requirements imposed by laws and statutes. In addition to the issues presented in this certificate, design, manufacturing and use shall follow appropriate construction methods.

The manufacturer is in charge of the product's quality and factory production control. In awarding this certificate, Eurofins Expert Services Oy does not bind itself to indemnification liability concerning personal injury or other damage that may directly or indirectly result from using the product described in this certificate.

This updated certificate C-9328-13 (issued first on February 14, 2013) has been granted as described above to
ACTIS SA.

On behalf of Eurofins Expert Services Oy on December 14, 2018

Tiina Ala-Outinen
Business Manager

Tiina Tirkkonen
Senior Expert

This document has been signed electronically

APPENDIX A: Insulation procedure

1. Installation of BOOSTR HYBRID and BOOSTR HYBRID ROOF in roof systems

The product is to be installed over rafters. When installed over rafters BOOSTR[®] HYBRID and BOOSTR[®] HYBRID ROOF perform as a vapour permeable roof tile underlay.

An example of BOOSTR[®] HYBRID and BOOSTR[®] HYBRID ROOF over rafter installation is given in Figures 1 and 2 below.

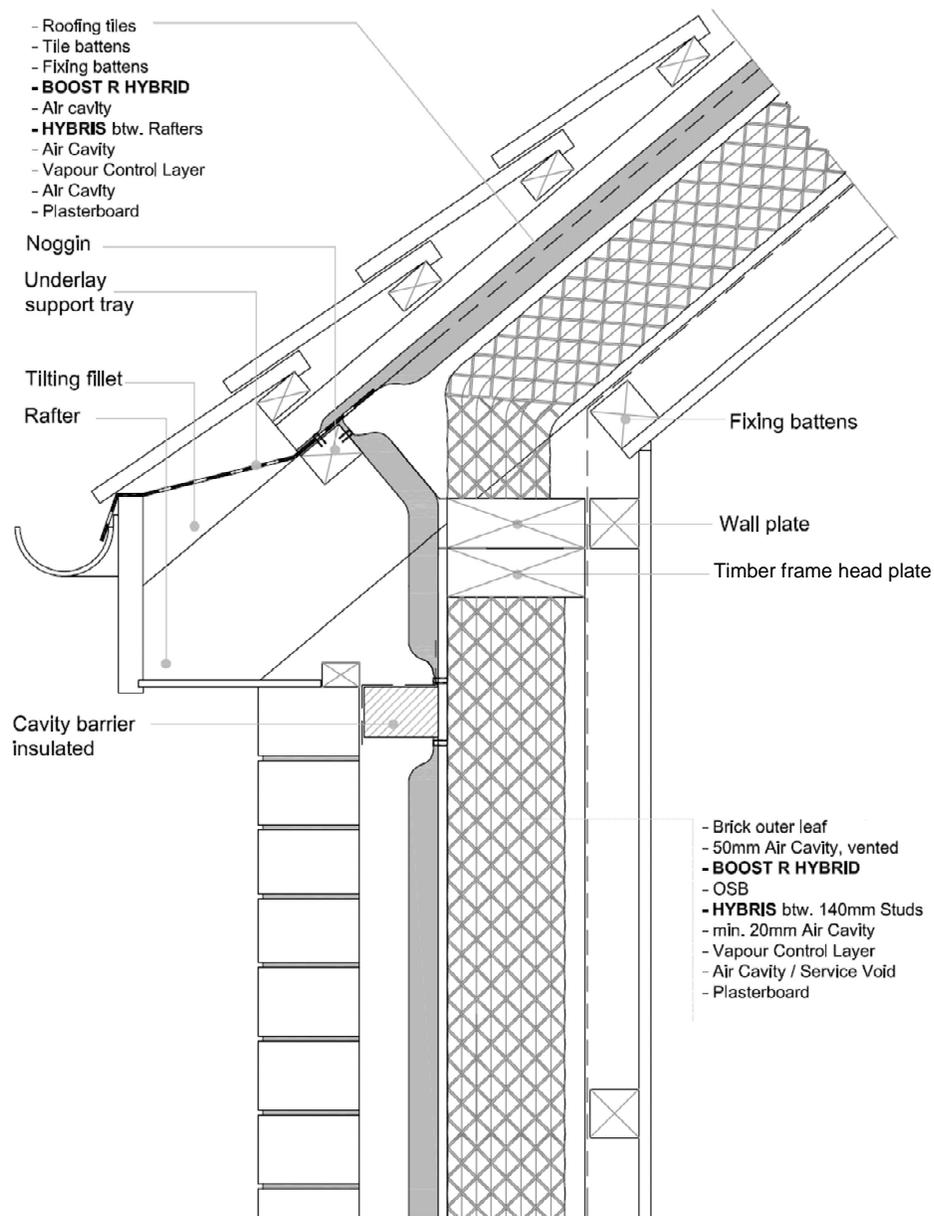


Figure 1. Eaves detail - Over rafter and timber frame wall with additional insulation

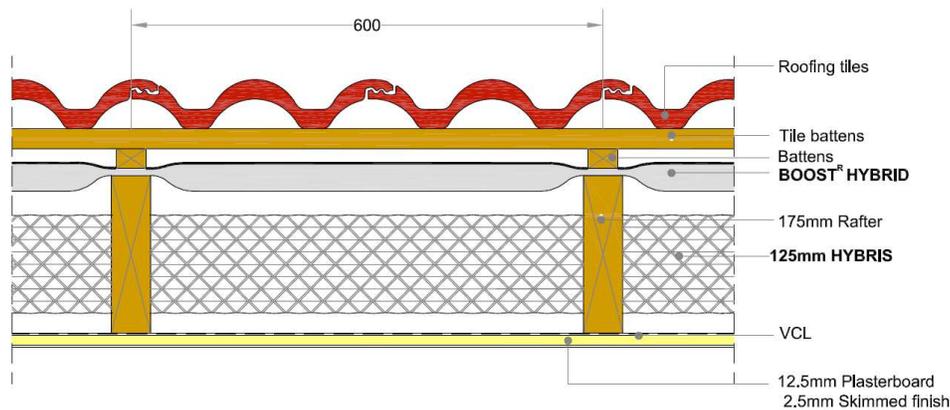


Figure 2. Over rafter roof installation with additional insulation

If required, BOOST[®] HYBRID and BOOST[®] HYBRID ROOF can be used in conjunction with another insulation product to achieve the design U-value.

2. Installation of BOOST[®] HYBRID in timber frame wall systems

When installed in a timber frame wall system BOOST[®] HYBRID performs as a vapour permeable (breather) layer.

The product is installed on the external face sheathing

All joints must have an overlap of at least 150mm vertically and 100mm horizontally. The product is fastened with corrosion protected nails or staples and over laps sealed with the reflective tape recommended for the product.

An example of a BOOST[®] HYBRID in a timber frame wall system is shown in Figure 3.

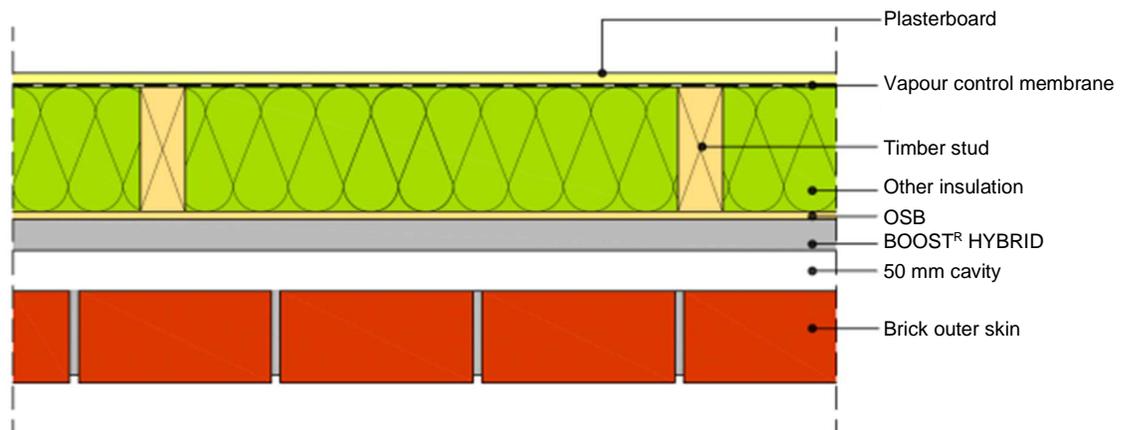


Figure 3. Timber frame wall installation with additional insulation

If required BOOST[®] HYBRID can be used in conjunction with another insulation product to achieve the design U-value.