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MEDITE® SMARTPLY®
INNOVATIVE TIMBER PRODUCTS

SMARTPLY® AIRTIGHT

SMARTPLY AIRTIGHT is a structural OSB/3 panel with integrated vapour control and air barrier properties for use as structural sheathing in timber frame structures.

Airtightness is engineered into the OSB panel substrate, whilst SMARTPLY's in-house speciality surfacing technology provides an integrated vapour barrier with consistently high vapour resistance over the entire surface.

AT A GLANCE > SMARTPLY AIRTIGHT:

- AIRTIGHT OSB/3
- PASSIVHAUS CERTIFIED
- INTEGRATED VAPOUR CONTROL
- HIGH RACKING STRENGTH
- FOR USE IN LOW ENERGY BUILDINGS
- NO ADDED FORMALDEHYDE
- FSC® CERTIFIED

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SMARTPLY® AIRTIGHT

FEATURES & BENEFITS

- Airtight OSB Passive House Institute (PHI) Certified Component - Class A - Airtightness Systems [surface air sealing]
- Integral component in Passive House Institute (PHI) Certified MEDITE SMARTPLY AIRTIGHT building systems, also incorporating MEDITE VENT breathable sheathing panel
- Rigid panel – less susceptible to damage than flexible membranes
- Manufactured from FSC® certified timber
- Consistently high vapour resistance – prevents interstitial condensation within the timber frame structure
- Durable smooth surface – excellent for airtight tape adhesion
- High racking strength – suitable for structural use
- Manufactured using no added formaldehyde resins
- Hygroscopic wood panel – helps prevent condensation in limited cases of reverse diffusion

SUITABILITY

SMARTPLY AIRTIGHT is designed for use as internal structural sheathing on the warm side of the insulation in timber frame construction systems. The integrated vapour control and air barrier properties eliminate the need for additional AVCL membranes. **SMARTPLY AIRTIGHT** meets all the requirements of EN 300 for the production of OSB/3 panels and therefore can be installed as any other OSB/3 panel.

For detailed design guidance on the specification of OSB/3 together with information relating to the mechanical and physical properties of the panel, please refer to the SMARTPLY OSB/3 Technical Datasheet.

SMARTPLY AIRTIGHT is CE marked in accordance with the harmonised standard EN 13986: Wood-based panels for use in construction – characteristics, evaluation of conformity and marking. This standard is a technical specification for wood based panels which implements the provisions of the Construction Products Regulation (CPR). **SMARTPLY AIRTIGHT** is also UKCA marked in accordance with the designated standard BS EN 13986.

SPECIFICATION AND DESIGN

As design values can vary between manufacturers, it is important to ensure that the **SMARTPLY AIRTIGHT** panels specified by the designer are those used on site. All SMARTPLY panels are clearly marked with the following information:

- **a** SMARTPLY logo
- **b** UKCA marking
  - i. UKCA logo
  - ii. Accredited body
  - iii. DOP number
- **c** FSC® certification (if applicable)
- **d** CE marking
  - i. CE logo
  - ii. Notified body
  - iii. DOP number
- **e** Relevant Standard (EN13986/EN300) and AVCP level (2+ structural)
- **f** Panel grade (OSB/3 - OSB/4)
- **g** Thickness
- **h** Formaldehyde class (eg - E1)
  - i Additional marking:
  - i. Date and time stamp
  - ii. Main axis arrow
  - iii. Product certification (IAB, BBA, WPA, FR BUILD) if applicable

Note: Markings may vary depending on product type.

SMARTPLY® AIRTIGHT

SIZES

SMARTPLY AIRTIGHT is available in a variety of sizes, with other sizes available on request (minimum order quantity may apply).

Dimensions	Thickness
2397 x 1197mm	12.5mm
2697 x 1197mm	12.5mm
2789 x 1197mm	12.5mm
3000 x 1197mm	12.5mm

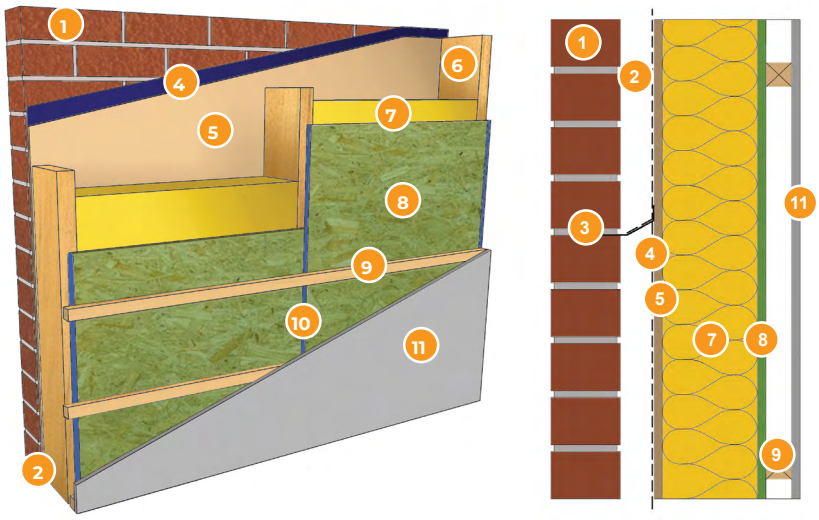
PHYSICAL PROPERTIES

SMARTPLY AIRTIGHT has been developed to comply with the air permeability requirements set out by leading building physicists and the Passive House Institute. Extensive development of the OSB core properties has resulted in an airtight OSB suited to the needs of the timber frame market. The factory applied specialist surface finish technology provides increased and constant vapour resistance on the warm side of the construction. The hygroscopic nature of the OSB panel acts as a humidity buffer to help prevent interstitial condensation within the timber frame structure in limited cases of reverse diffusion.

Physical Properties				
Property		**Units**	**Standard**	**Values**
Thickness		mm	EN 324	12.5
Moisture content		%	EN 322	2-12
Release of formaldehyde		Class	EN 13986	E1
Thermal conductivity		W/m.K	EN 13986	0.1
Water vapour diffusion factor (μ)	dry cup	-	EN 12572	750±80
	wet cup			420±50
Equivalent air layer thickness (sd)	dry cup	m	EN 12572	9.4±1.0
	wet cup			5.2±0.6
Air permeability @ 50Pa		$m^3/m^2/h/Pa$	-	<0.001
Air permeability coefficient @ 50Pa		$m^3/(h.m^{2)}$	EN 12114	<0.005
Air permeability of air tightness system @ 50Pa using SMARTPLY AIRTIGHT and speciality airtight tapes		$m^3/h/m2$	EN 13141	0.17

SMARTPLY®
AIRTIGHT

STANDARD INSTALLATION



1. RAINSCREEN CLADDING
2. VENTILATED AND DRAINED CAVITY
3. STAINLESS STEEL WALL TIE
4. BREATHER MEMBRANE
5. MEDITE VENT BREATHABLE MDF PANEL (RECOMMENDED)
6. TIMBER STUD
7. INSULATION
8. SMARTPLY AIRTIGHT
9. TIMBER BATTEN PROVIDING SERVICE VOID
10. AIRTIGHT TAPE
11. INNER LINING

Step by step installation:

1. When installing **SMARTPLY AIRTIGHT** a 3mm expansion gap must be left around the edges of the panel to accommodate any movement resulting from changes in humidity.
2. It is essential that the gaps are kept free from plaster, mortar and other debris during construction. The panel may be installed using screws, nails or staples. Nails or screws should be galvanised, stainless steel or have similarly durable properties. These include wire nails, annular ring shank nails and proprietary gun driven nails with a minimum diameter of 2.8mm and a minimum length of 50mm. The type, size and spacing of fixings should be confirmed by the timber frame panel designers. Mechanical fixings must not excessively restrict the natural movement of the OSB panels.
3. Fixings should be spaced at 150mm centres along the panel perimeters and at 300mm centres on intermediate studs. Fixings must be at least 10mm from the edge of the panel. In order to avoid buckling, fixings should commence at the top centre of the panel and continue outwards and downwards.
4. **SMARTPLY AIRTIGHT** is suitable for inner sheathing of timber frame wall panels with stud framings not less than 38mm in width and at a maximum of 600mm centres. Suitable sawing, routing and drilling tools should always be used.
5. Joints, surface penetrations and junctions to adjoining structural elements must be sealed airtight with suitable air tight tape or sealing solutions. Please refer to **SMARTPLY AIRTIGHT** OSB installation guide for comprehensive illustrated step-by-step guidance.
6. During the construction phase **SMARTPLY AIRTIGHT** panels should be protected as soon as possible from water or strong UV sunlight which could affect the panel surface.

SMARTPLY®
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TRANSPORTATION, STORAGE & HANDLING

Careful transportation, storage and handling are important to maintain panels in optimum condition prior to use.

a **SMARTPLY AIRTIGHT** panels should be stored horizontally and lifted clear of the floor using dry bearers as supports. Individual bearers should be of equal thickness and placed at not more than 600mm centres.

b Panels should never be stacked on their edges otherwise panel distortion may result.

c Protect panels from the elements during storage to avoid damage to the face and edge.

d Do not leave packs or panels exposed to the weather prior to erection.

e As with all timber products **SMARTPLY AIRTIGHT** should be conditioned, on site, for a suitable period of time prior to installation.

APPLICATIONS

SMARTPLY holds a patent for the **SMARTPLY AIRTIGHT** techonology. Airtightness is engineered into the OSB panel substrate, whilst AIRTIGHT's inhouse speciality surfacing technology provides an integrated vapour barrier with consistently high vapour resistance over the entire surface. The coating also provides a smooth durable surface for superior bonding of airtight tape at panel joints. **SMARTPLY AIRTIGHT** provides a sustainable and robust alternative to specialist AVCL membranes which are prone to damage by site trades during the construction process. The product is suitable for both new build and renovation projects.

AIRTIGHTNESS

SMARTPLY collaborated with the leading institutes of building physics to validate the airtight properties of the OSB panel. Rigorous testing has proved the compatibility of the surface finish with specialist airtight tapes. Tests conducted at the Fraunhofer Institute of Building Physics demonstrated the suitability of the coated surface for tape adhesion when tested at pressures of +/- 2000Pa.

VAPOUR DIFFUSION

SMARTPLY AIRTIGHT is certified by PHI for use in cool, temperate climates where vapour control is required on the warm side of the insulation. The specialist coating applied to **SMARTPLY AIRTIGHT** provides a consistently high vapour resistance over the entire panel surface which negates the need for a separate vapour control membrane. It is recommended that a condensation risk analysis or advanced hygrothermal assessment of composite wall systems is undertaken to ensure that the construction will not be at risk of moisture damage throughout the life of the building. Detailed recommendations for the control of condensation are given in BS 5250 which now refers to EN ISO 13788 as the method of calculation (Glaser Method) but more advanced methods of hygrothermal simulation are recommended as detailed in EN 15026.

SMARTPLY®
AIRTIGHT

QUALITY & ENVIRONMENTAL CERTIFICATION

SMARTPLY OSB panels are manufactured in accordance with the requirements of EN 300: Oriented Strand Boards (OSB) - definitions, classification and specifications.

SMARTPLY OSB is CE marked in accordance with the harmonised standard EN 13986: Wood-based panels for use in construction – characteristics, evaluation of conformity and marking. This standard is a technical specification for wood based panels which implements the provisions of the Construction Products Regulation (CPR). In addition to the CE mark, SMARTPLY OSB panels are marked 2+ Structural for ease of reference. SMARTPLY OSB is UKCA marked in accordance with the designated standard BS EN 13986.

Other quality certification includes KOMO (Netherlands).

SMARTPLY operates under an Integrated Management System (IMS) for Quality (ISO 9001), environment (ISO 14001), Health and Safety (ISO 45001) and Energy (ISO 50001), which is certified by the National Standard Authority of Ireland (NSAI).

All SMARTPLY products are manufactured from Forest Stewardship Council® (FSC®) certified timber.

SMARTPLY operates under an Integrated Pollution Prevention Control (IPPC) licence, which is monitored by the Environmental Protection Agency (EPA) in Ireland.

All SMARTPLY products are manufactured using formaldehyde-free resin.

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SMARTPLY® AIRTIGHT

NO ADDED FORMALDEHYDE

SMARTPLY AIRTIGHT is manufactured using advanced resin technology that results in a high performance, no added formaldehyde panel. This specialist resin formulation provides a supreme bond with the wood strands as it has a reaction with the wood itself, when put under intense heat, creating a chemical weld. This is a different and superior type of bond to the mechanical weld that formaldehyde based products exhibit. Depth of penetration is well beyond the minimum 0.3mm needed for a wood resin to provide adequate adhesive strength. This extra resin penetration also greatly improves the wood's resistance to thickness swell.

EXPLORE OUR SMARTPLY RANGE

For quick reference, see below our table that highlights each product's features and benefits.

PRODUCT	OSB/3	OSB/4*	No added formaldehyde	Available in T&G	Certified Airtight	Low Slip Risk Coating	Pre-cut /Pre-rebated	Primed	Sound Reduction Compliance
SMARTPLY MAX	●		●	●					
SMARTPLY MAX DB	●		●	●					●
SMARTPLY ULTIMA		●	●	●					
SMARTPLY SURE STEP DB	●		●	●	●	●			●
SMARTPLY STRONGDECK		●	●	●					
SMARTPLY AIRTIGHT	●		●		●				
SMARTPLY PATTRESS PLUS	●		●				●		
SMARTPLY SITEPROTECT	●		●					●	

***OSB/4 is approximately 30% stronger and 20% more moisture resistant than OSB/3 making it more suitable for humid and heavy duty load -bearing applications.**

Looking for a certified airtight flooring panel for your next project? **SMARTPLY SURE STEP DB** is an airtight, tongue and grooved OSB/3 panel with a high performance, durable low slip risk coating that can be left exposed for up to 45 days with no degradation.
Find out more.

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For further information and/or technical advice please contact our dedicated customer service team.

UK: +44 (0) 1322 424900
Ireland: +35 (0) 3518 10205
France: +33 (0) 9751 89830
Netherlands: +31 (0) 8588 86230
Belgium: +32 (0) 2808 6256

As we continually update our technical datasheets, please check on www.mdfosb.com that you have the latest version.

This technical datasheet is provided for information purposes only and no liability or responsibility of any kind is accepted by **SMARTPLY EUROPE DAC** or their representatives. **SMARTPLY EUROPE DAC** have used reasonable efforts to verify the accuracy of any advise, recommendation or information. **SMARTPLY EUROPE DAC** reserves the right to alteration of its products, production information and range without notice.

The recommendations provided in this technical datasheet for the correct use of **SMARTPLY AIRTIGHT** panels are specifically designed to ensure longevity and performance of this quality product in service. It is therefore essential that these recommendations are strictly followed.

The product is designed to be installed by a competent contractor, experienced with this type of product. **SMARTPLY EUROPE DAC** cannot be held responsible for damages arising from nonadherence to these recommendations, or product failures resulting from inadequate structural design or misuse of this product.

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In order to provide comprehensive guidance for the correct use of **SMARTPLY AIRTIGHT**, this technical datasheet makes reference to relevant BS and EN standards. **SMARTPLY EUROPE DAC** cannot be held responsible for claims arising from the use of any information that has been extracted from such sources.

SMARTPLY®
DEFINING THE STANDARD OF OSB

For over 20 years, Ecological Building Systems has been at the forefront of environmental and sustainable building products supplying a range of innovative airtightness solutions and natural insulations backed up with expert technical support.

As product suppliers in the UK and Ireland, we're happy to assist you with your projects and have expert technical and sales advice on hand.

Call us

Great Britain +44 (0)1228 711511

Ireland +353 46 9432104

Email us

info@ecologicalbuildingsystems.com

Find us

Great Britain Ecological Building Systems UK Ltd.,
Cardewlees, Carlisle, Cumbria, CA5 6LF,
United Kingdom

Ireland Ecological Building Systems Ltd.,
Main Street, Athboy. Co. Meath, C15 Y678,
Republic of Ireland

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Discover our solutions online at

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