

SMARTPLY® AIRTIGHT

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

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FEATURES AND 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
- Easy to cut and fix – reduces installation time
- Rigid panel – less susceptible to damage than flexible membranes
- 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
- No added formaldehyde – contributing to healthier environments
- Hygroscopic wood panel – helps prevent condensation in limited cases of reverse diffusion
- Manufactured from FSC® certified timber from our own forests – assured supply of sustainable raw material

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.

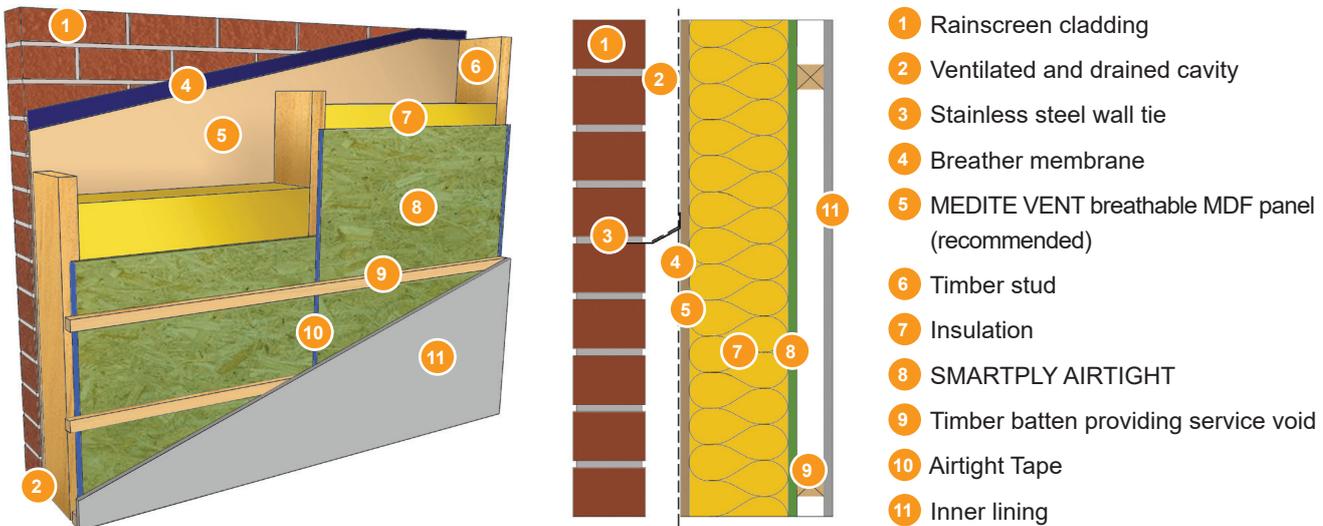
APPLICATIONS

A patent was granted for SMARTPLY AIRTIGHT. 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.

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/m ²	EN 13141	0.17



TYPICAL INSTALLATION



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.

NO ADDED FORMALDEHYDE

SMARTPLY AIRTIGHT is manufactured using advanced resin technology that results in a high performance, no added formaldehyde OSB/3 panel. SMARTPLY OSB/3 has been independently assessed by NSAI for compliance to EN 13986:2004 and as a requirement by the Building Research Establishment's Environmental Assessment Method (BREEAM) under section 'Hea 02 Indoor Air Quality' can contribute towards a BREEAM rating / credit.

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 woodbased 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.

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).

SMARTPLY has Forest Stewardship Council® (FSC®) Chain of Custody certification for its manufacturing, processing, sales and distribution processes.

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INSTALLATION

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.

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.

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.

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.

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.

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.

IMPORTANT NOTES

The recommendations provided in this Technical Data Sheet 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.

SUPPLY

12.5 x 2397 x 1197mm (Other dimensions on request).

STORAGE

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.

CONTACT US

For further information relating to transportation, handling, cutting or technical advice please contact your local SMARTPLY Technical Sales Manager or Technical Support Personnel through any of our European offices:

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