



Modern Methods of Construction (MMC) Guide

Let's do the right thing!

MEDITE[®]
SMARTPLY[®]
INNOVATIVE TIMBER PRODUCTS 



AN INTRODUCTION TO **MEDITE SMARTPLY**

MEDITE SMARTPLY is a market leading manufacturer of sustainable timber construction panels. Our award-winning brands **MEDITE** and **SMARTPLY** are renowned for delivering the highest quality products, customer-led innovation and industry leading customer service.

Our manufacturing sites in Clonmel (**MEDITE**) and Waterford (**SMARTPLY**) in Ireland feature the latest production technology to deliver straighter, flatter and more consistent panels than ever before, in a range of sizes and thicknesses unparalleled within the industry. Constant progression and investment have allowed **MEDITE SMARTPLY** to enter new diverse markets and sectors, meaning that there is always a fresh pipeline of new products to address market demands.

As part of the Coillte Group, we pride ourselves on our sustainable supply chain and manufacturing processes, meaning our products are as environmentally conscious in their make up as they are in their applications.

We have become known for adapting products and services to suit end users' needs, while maintaining a consistent stance on sustainability and creating products that add value throughout the supply chain.



A new standard

MEDITE SMARTPLY provides a diverse range of MDF and OSB panels with the aim of solving design and installation issues faced by the built industry today.

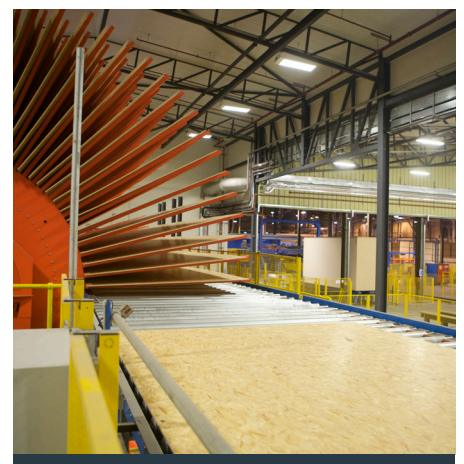
With unrivalled quality and environmental certification, **SMARTPLY OSB** is one of the most environmentally efficient building materials on the market. Each panel is made from sustainable, FSC®

certified, fast-growing timber: the forest thinnings of new-growth pine and spruce.

SMARTPLY OSB panels are fully certified, approved for structural use, CE and UKCA compliant, legal and sustainable alternatives to tropical plywood. We set the standard in product performance, structural integrity and largescale projects.

Furthermore, all our OSB products

are manufactured with no added formaldehyde as standard. This means that when working closely with our products, users can rest assured that each panel contains only the smallest possible level of formaldehyde that is naturally occurring in all wood products. This is also part of our aim to better enable the continued conscious creation of safe, healthy environments for building occupants.



We define the standard of OSB.



The mark of responsible forestry

WHAT ARE MODERN METHODS OF CONSTRUCTION AND WHY ARE THEY IMPORTANT?

'Modern Methods of Construction' (MMC) is a collective term for a range of non-traditional building systems. These include offsite and modular construction units fully fitted out off-site, and panelised systems, such as timber or light steel frames – amongst others.

For decades, the UK has not built enough homes to meet demand, leading to rising housing costs. The government has set the target of building 300,000 new homes every year by the mid-2020s, but a shortage of skilled workers, amongst other constraints, means this will not be achieved unless a significant portion of these homes are built using MMC.

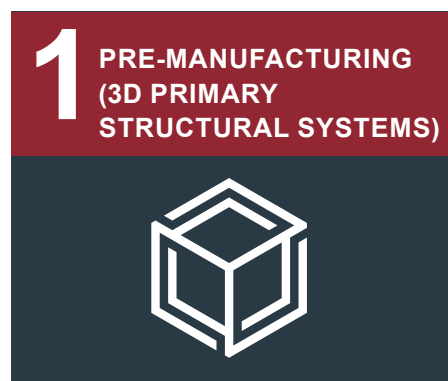
The 2017 government whitepaper 'Fixing Our Broken Housing Market'¹ supported the contribution and achievement that MMC is expected to make towards solving the UK housing crisis. In particular, it pointed to the potential for a 30% improvement in the speed of construction of new homes, with a possible 25% cost reduction and potential for improving home quality and energy efficiency.

MMC is not just unlocking potential for private homes, but

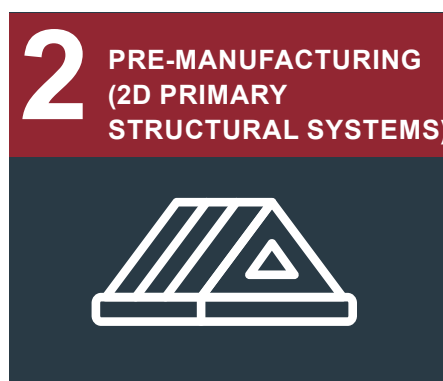
increasingly we're seeing a rise in demand for these techniques in healthcare, education and social housing.

In broader terms, MMC also has the potential to significantly contribute to the UK's climate target of reaching net-zero by 2050 and plays an important part of the government's strategy in this. The construction sector currently comprises only 6% of the UK economy² but directly accounts for 10% of emissions³, while the wider built environment contributes around 40% of the UK's total carbon footprint.⁴ MMC, specifically offsite construction, can be a key player in driving emissions down through reducing the transportation of components to and from site, limiting production of landfill waste, limiting embodied emissions and delivering more sustainable structures across their lifecycles.

System types within offsite construction which regularly use OSB such as ours to achieve project goals



This systemised approach is based on volumetric construction involving the production of three-dimensional units in controlled factory conditions prior to final installation. Units can be brought to site in various of forms, ranging from basic structures to ones with all internal and external finishes and services fitted, ready for installation.



This approach uses flat panel units used for basic floor, wall and roof structures of varying materials, which are factory produced and assembled onsite to create a final three-dimensional structure. The most common approach is to use open panels, or frames, which consist of a skeletal structure only. Services, insulation, external cladding and internal finishing are usually installed onsite.



This is a series of different pre-manufacturing approaches that includes unitised non-structural walling systems, roofing finish cassettes or assemblies (where they are not part of a wider structural building system), non-load bearing mini-volumetric units (sometimes referred to as 'pods') used for highly serviced, more repeatable areas such as kitchens and bathrooms, as well as utility cupboards, risers and plant rooms.

¹ Fixing our broken housing market. Ministry of Housing, Communities & Local Government. 2017: [gov.uk/government/publications/fixing-our-broken-housing-market](https://www.gov.uk/government/publications/fixing-our-broken-housing-market)

² <https://www.pbctoday.co.uk/news/modular-construction-news/mmc-for-healthcare-education/84689/>

³ Construction Industry: Statistics and Policy. House of Commons Library, Briefing Paper, 01432, 16.12.2019, p. 4

⁴ Carbon Dioxide in Construction. Designing Buildings Wiki, 17.09.2020: [designingbuildings.co.uk/wiki/Carbon_dioxide_in_construction](https://www.designingbuildings.co.uk/wiki/Carbon_dioxide_in_construction)

⁵ Climate Change. UK Green Building Council: [ukgbc.org/climate-change/](https://www.ukgbc.org/climate-change/)

CHARACTERISTICS OF OFFSITE AND TIMBER FRAME CONSTRUCTION

Studies show that the characteristics of offsite, by its nature, meet a number of the Construction Leadership Council aspirations.

Offsite construction approaches the design and construction of buildings and infrastructure with a manufacturing mindset. This inherently brings a level of cost certainty –often between 20-40% lower than traditional building – that may not be achieved with traditional building.

But cost is not the only plus: factory production eliminates room for human error (while also reducing risks to worker safety) and produces components much less likely to feature defects, with predictable performance. In some cases, up to a 60% reduction in construction programme time, with a general reduced risk of delays and greater time certainty can also be enjoyed.

Further to this, it's been recognised that the waste generated on traditional method construction sites is at least 10% of all materials delivered. This could actually be up to 30% of the total weight of building materials delivered to a building site in some cases.⁵ Overall waste generation is much reduced with offsite construction as sections of each building are produced to precise requirements.



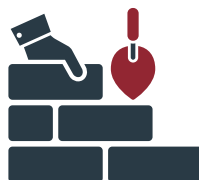
20-40%

Reduction in Cost



20-60%

Reduction in Construction Programme Time



70%

Reduction in Onsite Labour (Health & Safety)



20%

Reduction in Pollution and Congestion (Road Accidents)



90%

Reduction in Onsite Waste Using Volumetric Construction

⁵ Construction Waste. Science Direct, Mohamed Osmani, 2011: sciencedirect.com/topics/earth-and-planetary-sciences/construction-waste

WHAT DOES MEDITE SMARTPLY BRING TO MODERN METHODS OF CONSTRUCTION?

MMC has been tipped as a game changer for the industry, so where do our products add value?

Aligning with the cost, speed and sustainability potential of offsite construction, **MEDITE SMARTPLY's** extensive range of **SMARTPLY OSB/3** and **OSB/4** panels are developed to meet the most demanding of applications. Furthermore, they can be easily produced to the specific size requirements often demanded by offsite and timber frame construction, thanks to Controll® manufacturing; the continuous pressing of wood strands into panels.

When properly managed, timber is one of the only sustainable construction materials. We have pioneered the sustainable timber industry in Europe, with all our specialised timber panels produced essentially as by-products of the sustainable forest management of the 7% of Ireland's forests now owned by

Coillte. Producing all of our **SMARTPLY OSB** from this source guarantees the sustainable production of our entire product range.

On top of this, **SMARTPLY OSB** is renowned for its insight and skill in developing individual products that meet specific, technically specialised sets of criteria.

SMARTPLY ULTIMA OSB/4, for example, has been developed especially for the offsite industry and sets the standard for racking strength, load-bearing capacity, moisture resistance and rigidity in OSB/4

Manufactured in panels of up to 2.8-metres wide and up to 7.5-metres-long, in a maximum thickness of 40mm, **SMARTPLY ULTIMA** is ideal for offsite construction, whereby entire sides of an apartment, home or school can be sheathed offsite in a controlled environment, and delivered to site and craned into place.

Offsite's controlled approach to planning and constructing buildings also eliminates room for error and gives opportunity for new eco-friendly process planning, designing and installing within a much-reduced time frame and budget.



IT'S ALL GO WITH MEDITE SMARTPLY

In a £3.6 million regeneration project, 4000m² of SMARTPLY ULTIMA OSB/4 panels were used for the construction of 11 new barn-style houses in Solihull, UK. Using offsite construction methods to manufacture the sides and roofs of each building, SMARTPLY ULTIMA was favoured for its strength and reliability.

'Home Farm' is a new housing development project that has transformed a derelict farmyard into much needed modern residential spaces. Eleven barns on the site presented large sides and high ceilings, meaning heavy duty, structural, large scale timber panels were required for sheathing and ensuring structural integrity. The perfect application for SMARTPLY ULTIMA OSB/4.

"We chose to use SMARTPLY ULTIMA as an alternative to plywood as we needed something really strong and reliable for these roofs," said Chris Watson, Quantity Surveyor for Nobles Construction, the contractor for the project.

SMARTPLY ULTIMA, manufactured by MEDITE SMARTPLY, is an extremely high-performance engineered OSB/4 wood panel developed for the most demanding structural applications, including those in offsite manufacturing

and construction.

"One of SMARTPLY ULTIMA's features that we appreciated the most is the fact that it is a high performance yet cost-effective solution in humid and high-load structural applications. We chose this panel as opposed to plywood for these reasons.

"I would definitely recommend using SMARTPLY ULTIMA. Not only are they FSC® Certified, but they are also ideal for timber frame and construction projects with large spans," Chris explains.

"We have really felt the benefit of SMARTPLY ULTIMA's high load-bearing capacity and overall improved rigidity. They are both invaluable for this type of project."

"This is my first time working on a project using MEDITE SMARTPLY products and it has been a very satisfying experience. I will definitely specify the company's products in the future."

Chris Watson,
Quantity Surveyor for
Nobles Construction,
the contractor for the project.



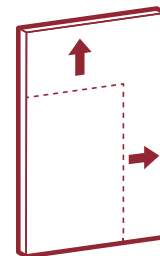
**Recognised
as a suitable
alternative to
plywood**

Features no knots or inconsistencies. OSB/4 certified for use in heavy-duty load bearing applications.



**No added
formaldehyde**

No formaldehyde manufacturing process ensures only naturally occurring, base-level formaldehyde.



**Larger
panels**

Cover more meterage in less time; ideal for offsite manufacturing.

MEDITE AND SMARTPLY

THE RIGHT MMC SOLUTION

With six structural **SMARTPLY OSB** solutions catering to the MMC, **MEDITE SMARTPLY** has sought to ensure the core qualities of strength, versatility and sustainable manufacturing are present throughout, while offering customers the choice of OSB/3 or OSB/4, moisture resistance and largescale sizing, depending on project needs.

As timber panel manufacturers who pride ourselves on innovation and consistently catering to the needs of those who will actually use our products, you won't ever find a **MEDITE SMARTPLY** panel that only does one thing. While each has its

specialisation, we understand that other qualities, while they may not be front line, are also extremely important and necessary.

Use the table below to clearly see which properties each product holds, and find their full specification sheet further on in the brochure.

Features

PRODUCT	Use in service class 1 and 2	Certified Airtight	Available in Tongue and Groove	Pre-cut, pre-rebated	Available in larger sizes	No added formaldehyde
SMARTPLY ULTIMA	•		•		•	•
SMARTPLY SURE STEP DB	•	•	•			•
SMARTPLY MAX	•		•		•	•
SMARTPLY MAX DB	•		•			•
SMARTPLY AIRTIGHT	•	•				•
SMARTPLY PATRESS PLUS	•			•		•
MEDITE VENT	•					•

SMARTPLY MAX SPECIFICATION



SMARTPLY MAX is a strong, versatile board suitable for structural use in humid conditions (service Class 1 and 2), ideal for applications as diverse as roofing, flooring and wall sheathing etc.

SMARTPLY MAX is a highly engineered, moisture resistant load-bearing panel designed for use in humid conditions and is therefore ideal for many structural and non-structural applications in both internal and protected external environments.

Manufactured in accordance with EN 300 performance standard, it is the perfect choice for roofing, flooring, wall sheathing and many other applications where strength and moisture resistance are paramount.

Features and Benefits:

- Versatile OSB/3 panel
- Suitable for use in humid conditions (service class 1 and 2)
- Excellent load-bearing
- Available in larger panel sizes to cover greater areas
- Suitable for LEED and BREEAM projects
- No added formaldehyde
- UKCA and CE certified
- Available in tongue and groove in select sizes

Thicknesses and sizes

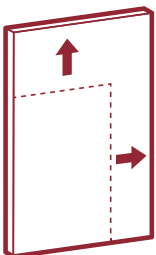
Standard Sizes	1197 x 2397mm	1220 x 2440mm	1250 x 2500mm	1197 x 2697mm	1197 x 2997mm
Available thicknesses	9mm, 11mm, 15mm, 18mm	9mm, 11mm, 15mm, 18mm	9mm, 11mm, 15mm, 18mm	9mm, 11mm, 15mm, 18mm	9mm, 11mm, 15mm

Other sizes available upon request, subject to minimum order quantities.

Suitability

It is versatile, strong and cost-effective. Manufactured with exterior resins, **SMARTPLY MAX** is suitable for both interior and exterior structural applications such as roofing, flooring and wall sheathing.

For more technical information or certification please visit www.mdfosb.com or contact your Technical Sales Manager.



Larger panels

Cover more meterage in less time.



Versatile

Suitable for a wide range of applications, offering quality and peace of mind.



Excellent load-bearing

For the ultimate in structural applications.

SMARTPLY MAX DB SPECIFICATION

NEW PRODUCT



SMARTPLY MAX DB is a tongue and groove OSB/3 panel designed to meet the residential internal floor sound insulation requirements of 40dB for use in all timber-based joists.

The panel has been tested in a UKAS accredited laboratory on osb-web i-joists, metal web and solid timber joists as part of the internal floor and achieved a sound reduction of at least 40dB to airborne sounds complying with the requirements of the Building

Regulations requirements in England, Wales, and Northern Ireland. Manufactured in accordance with EN 300, SMARTPLY MAX DB is a load bearing panel ideal for use as decking for internal flooring to meet the sound insulation requirements.

Features and Benefits:

- Complies with Building Regulation requirements Part E in England & Wales, Technical Booklet G in Northern Ireland
- Tested to meet the 40dB acoustic requirement for residential internal flooring
- Lightweight panel - 30% lighter than 22mm chipboard
- Versatile OSB/3 panel
- High quality, moisture resistant load bearing flooring panel
- No added formaldehyde
- UKCA and CE certified
- Smooth and consistent quality
- Tongue and groove edges – quick and easy installation

Thicknesses and sizes

Available thicknesses	18mm T&G4	18mm T&G2
Standard Sizes	2440 x 600mm	2397 x 1200mm

Other sizes available upon request, subject to minimum order quantities.

Suitability

It is versatile, strong and cost-effective. Manufactured with exterior resins, **SMARTPLY MAX DB** is a structural panel designed for internal flooring on timber based joists.

For more technical information or certification please visit www.mdfosb.com or contact your Technical Sales Manager.



Contributes towards 40dB

When in a flooring system, MAX DB helps achieve the 40dB regulations.



30% lighter than 22mm chipboard

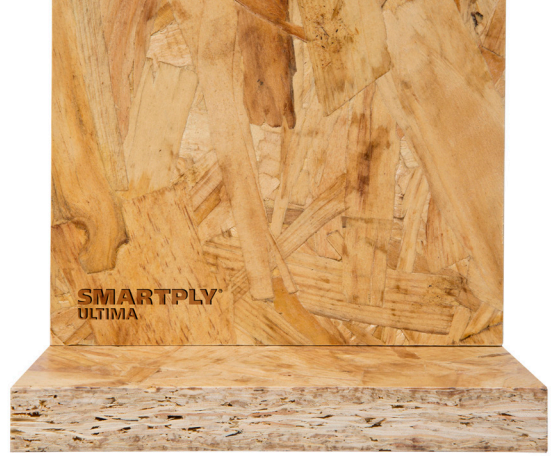
Each panel is lighter to lift and contributes to cheaper haulage costs.



Excellent load-bearing

For the ultimate in structural applications, perfect for residential internal flooring.

SMARTPLY ULTIMA SPECIFICATION



SMARTPLY ULTIMA is an extremely high-performance engineered wood panel (OSB/4) suitable for the most demanding structural applications including in offsite manufacturing and construction.

SMARTPLY ULTIMA is an extremely high-performance engineered wood panel (OSB/4) suitable for the most demanding structural applications in offsite manufacturing and construction.

It is a cost-effective alternative in humid and high-load structural applications when compared to a similar performing structural plywood.

Features and Benefits:

- A highly engineered OSB/4 panel
- Ideal for timber frame and construction projects with large spans
- High load-bearing capacity
- Enhanced moisture resistance compared to OSB/3
- No added formaldehyde
- UKCA and CE certified
- Available in tongue and groove in select sizes

Thicknesses and sizes

Available Thicknesses	18mm	22mm
Standard Sizes	1220 x 2440mm 1250 x 2500mm	1197 x 2397mm

Other sizes available upon request, subject to minimum order quantities.

Suitability

SMARTPLY ULTIMA is for use in demanding structural applications such as: offsite construction systems, commercial and industrial buildings and site-based timberframe construction.

For more technical information or certification please visit www.mdfosb.com or contact your Technical Sales Manager.



Suitable for demanding structural applications

Ideal for timber frame and construction projects with large spans.



Higher moisture resistance

Improved for superior quality and versatility.



High load-bearing capacity

For the ultimate in structural applications.

SMARTPLY PATTRESS PLUS SPECIFICATION



SMARTPLY PATTRESS PLUS is an engineered OSB/3 panel incorporating a continuous recess, designed to accommodate 'C' shaped metal studs used in the construction of plasterboard partitions.

SMARTPLY PATTRESS PLUS is tested to the relevant sections of BS 5234-2 demonstrating high pull out strength, and meets the severe heavy duty rating for pattrassing. It is suitable for use in public access areas including corridors and stairwells, contributing to higher levels of impact resistance.

It has no added formaldehyde and therefore may also be useful in environmentally sensitive interior applications where formaldehyde emissions need to be kept to a minimum such as hospitals, laboratories, museums and schools.

Features and Benefits:

- Pre-cut and pre-grooved OSB/3 panel
- Designed for 'C' shaped metal studs in partition walls
- Provides secure anchorage for fixtures and fitting as tested to BS 5234-2
- Does not add to finished partition thickness
- Suitable for LEED and BREEAM projects
- No added formaldehyde
- UKCA and CE certified

Thicknesses and sizes

Available Thicknesses	15mm	18mm
Standard Sizes	397 x 1250mm 397 x 2397mm 597 x 1250mm 597 x 2397mm	397 x 1250mm 397 x 2397mm 597 x 1250mm 597 x 2397mm

Other sizes available upon request, subject to minimum order quantities.

Suitability

SMARTPLY PATTRESS PLUS is designed for use in non-structural metal frame drywall partition applications where the in-service climatic conditions and ambient relative humidity (RH) levels are similar to those expected in dry, sheltered construction environments.



Pre-cut and pre-rebated off-site

Delivered to your project ready to use, saving time and labour.



Fits perfectly between the stud wall

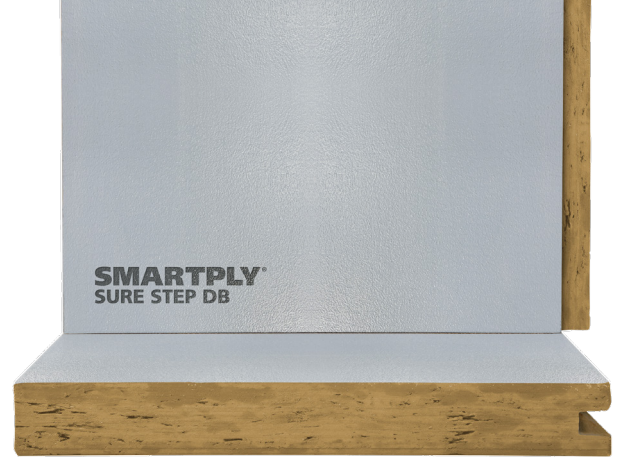
All available sizes correspond with leading plasterboard partition specifications.



Two sizes and thicknesses available, allowing a safe one-person lift

Two sizes and thicknesses available for adaptability.

SMARTPLY SURE STEP DB SPECIFICATION



SMARTPLY SURE STEP DB is an airtight, tongue and groove OSB/3 panel with a high-performance and durable coating. This innovative panel has also been tested in a flooring system to meet the residential internal floor sound insulation requirements of 40dB for England, Wales and Northern Ireland.

Using **SMARTPLY SURE STEP DB** as an air tight layer for flooring or decking can contribute to sustainable building practices as well as reduce the energy consumption for heating, whilst the unique coating brings improved durability during the

construction phase and slip resistance to the panel in all site conditions. The high-performance coating allows the panel to be exposed for up to 45 days with no degradation, when installed correctly.

Features and Benefits:

- Can be exposed for up to 45 days without degradation
- Complies with Building Regulation requirements Part E in England & Wales, Technical Booklet G in Northern Ireland
- High performance coating reduces slip risk during construction
- Tested to meet the 40dB acoustic requirement for residential internal flooring
- Independently tested by 3rd party accredited laboratories
- Certified airtight by the Passivhaus Institute
- Lightweight panel - 30% lighter than 22mm chipboard
- 100% solids UV cured specialist coating (no solvents)
- Tongue and groove edges – quick and easy installation
- No added formaldehyde
- UKCA and CE certified

Thicknesses and sizes

Available Thicknesses	18mm, 22mm T&G2
Standard Sizes	2397 x 1200mm

Other sizes available upon request, subject to minimum order quantities.

Suitability

Manufactured in accordance with EN 300, **SMARTPLY SURE STEP DB** is an airtight load bearing panel ideal for use as flooring or roof decking where airtightness, improved durability, temporary protection, reduced edge swelling or reduced surface degradation are required on projects.



**Airtight
OSB panel**

Airtight panel certified by the Passivhaus Institute

45

**days without
degradation**

SURE STEP DB can be exposed for up to 45 days without degradation



**Low slip
risk**

The panel offers safer working surfaces low slip risk

SMARTPLY AIRTIGHT SPECIFICATION



SMARTPLY AIRTIGHT is a structural OSB 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.

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.

Features and Benefits:

- Airtight panel certified by the Passivhaus Institute
- Airtight OSB/3 panel
- Durable smooth surface – excellent for airtight tape adhesion
- For use in low energy building and passive house buildings
- High performance coating
- Integrated vapour control
- No added formaldehyde
- UKCA and CE certified

Thicknesses and sizes

Available Thicknesses	12.5mm
Standard Sizes	2397 x 1197mm 2697 x 1197mm

Other sizes available upon request, subject to minimum order quantities.

Suitability

SMARTPLY AIRTIGHT is an airtight OSB panel, certified by the PassivHaus Institute, designed to create robust airtight layers for passive and low energy buildings. The integrated vapour control layer makes it the perfect solution for application in MMC projects.



**Airtight
OSB panel**

Allows passive heating of the structure with full heat retention.



**Integrated
vapour control**

Consistently high vapour resistance.



**No added
formaldehyde**

No formaldehyde manufacturing process ensures only naturally occurring formaldehyde.

MEDITE VENT SPECIFICATION



MEDITE VENT is a high performance breathable sheathing panel suitable for use in all types of timber frame structures.

Combining high racking strength in excess of Category 1 requirements, with high vapour permeability, it is the perfect choice for the outer sheathing layer in highly insulated systems where risk of condensation is increased or 'diffusion open' breathable timber frame walls.

Integral component in Passive House Institute (PHI) Certified MEDITE SMARTPLY AIRTIGHT building systems, also incorporating SMARTPLY AIRTIGHT OSB.

Features and Benefits:

- Breathable MDF panel
- Perfect for use in low energy buildings
- Works with SMARTPLY AIRTIGHT
- Smooth surface
- Certified to system 2+ for structural (racking) applications
- Consistent quality and thickness
- UKCA and CE certified

Thicknesses and sizes

Available Thicknesses	12mm
Standard Sizes	1197 x 2397mm

Other sizes available upon request, subject to minimum order quantities.

Suitability

MEDITE VENT is a breathable sheathing panel suited to diffusion open systems with a very low water vapour diffusion factor to prevent condensation. It has no added formaldehyde, contributing to healthy environments.



**Breathable
MDF**

Suitable for use in service class 2 conditions.



**Perfect
for use in
low energy
buildings**

Energy efficient and environmentally sound, healthy buildings.



**Suitable for
demanding
structural
applications**

Combining high racking strength in excess of Category 1 requirements.



1353

F104 Fromm Laoi

protect FCM750 protect FCM750 protect FCM750 protect FCM750

2054
x
1200

To request a sample, visit:
www.mdfosb.com/smartply/request-samples

To find out how we are setting new
standards in timber panel engineering, go to:
www.mdfosb.com

Let's do the right thing!

