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MEDITE® SMARTPLY®
INNOVATIVE TIMBER PRODUCTS

SMARTPLY® MAX FR

SMARTPLY MAX FR is a flame retardant OSB/3 panel suitable for use in accordance with the requirements of the STA Design guide to separating distances during construction and will provide the performance needed to contribute the appropriate assembly compliance up to Category B3 in timber frame. In addition, **SMARTPLY MAX FR** has a reaction to fire class C-s2, d0 and B_{fl}-s1 in accordance with EN 13501-1.

For maximum fire protection performance, the OSB strands are pre-treated with flame retardant before being formed into a structural panel in accordance with EN 13986. **SMARTPLY MAX FR** panels are fully compliant with the grade OSB/3 of EN 300 making them the perfect choice for roofing, flooring and wall sheathing where strength, moisture resistance and fire protection is paramount.

AT A GLANCE > SMARTPLY MAX FR:

- FLAME RETARDANT OSB/3
- UKCA AND CE MARKED
- WPA BENCHMARK FR QAS ACCREDITED
- HIGH QUALITY STRUCTURAL PANEL
- NO ADDED FORMALDEHYDE
- FSC® CERTIFIED

www.mdfosb.com

SMARTPLY®
DEFINING THE STANDARD OF OSB

DATASHEET

SMARTPLY® MAX FR

FEATURES & BENEFITS

- Structural and flame-retardant panel
- CE and UKCA marked panels for structural and reaction to fire properties
- Reaction to fire classification to EN13501-1 of C-s2, d0 and B_{fl}-s1 (flooring)
- Flame retardant efficacy independently verified under the Wood Protection Association (WPA) Benchmark FR formulation approval scheme
- Manufactured from FSC® certified timber
- Suitable for use in accordance with the requirements of the STA Design guide to separating distance during construction
- Manufactured using no added formaldehyde resins
- Panel production is accredited under the third-party WPA Benchmark FR Product and FR Build* quality schemes operated by the WPA

*Operated by the WPA for the Structural Timber Association FR Build scheme

SUITABILITY

Manufactured on the state of the art Contiroll® OSB production line in accordance with EN 300, SMARTPLY MAX FR is a load bearing panel ideal for use in floor, wall and roof applications. EN 300 classifies OSB panels by their properties which relate to their intended use. **SMARTPLY MAX FR** is classified as follows:

- OSB/3 - load bearing panel for use in humid conditions

Structures comprising **SMARTPLY MAX FR** should be assigned to service class 1 or 2 as defined in EN 1995-1-1 (Eurocode 5), SMARTPLY MAX FR is suitable for use in both of these service classes.

SIZES

SMARTPLY MAX FR is only available in the following sizes:

Dimensions	Thickness
2397x1197mm SE	15, 18mm
2397x1200mm TG2	18mm

SPECIFICATION & DESIGN

As design values can vary between manufacturers, it is important to ensure that the **SMARTPLY MAX FR** 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® MAX FR

INSTALLATION

SMARTPLY MAX FR is an OSB/3 grade panel and should be installed by following the recommendations provided in the SMARTPLY FRAME, SMARTPLY FLOOR and SMARTPLY ROOF technical datasheets.

FIRE PERFORMANCE & CERTIFICATION

SMARTPLY MAX FR is manufactured using flame retardant solution that has been uniquely developed to penetrate deeply into the wood strands. The flame retardant is added during the panel manufacturing process. Any post processing, edge cutting, nailing etc will not affect the fire performance of **SMARTPLY MAX FR**. Addition of the flame retardant solution during the manufacturing process ensures that panel quality is maintained to EN300 unlike some post treatment FR technologies which can tend to have a damaging effect on the mechanical or physical properties of a panel.

The Wood Protection Association (WPA) BENCHMARK symbol confirms that the process of applying a retardant has been quality assessed and certified by the WPA.

SMARTPLY MAX FR is also certified FR BUILD by the Wood Protection Association for the Structural Timber Association (STA) and therefore is an approved FR treated product for the construction phase of timber frame structures.

In addition, as required by the Construction Product Regulation in the European Union and the UK, **SMARTPLY MAX FR** reaction to fire performance is evaluated and certified in accordance with the requirements of EN 13501-1 and is CE and UKCA marked. **SMARTPLY MAX FR** panels in thickness 11mm to 18mm achieved a reaction to fire class C-s2, d0 and B_{fl}-s1 in accordance with EN 13501-1.

STA TIMBER FRAME CATEGORIES

The STA points system allocates a minimum number of points a build must achieve in order to reach a specific category. To achieve a specific categorisation for an assembly the points indicated for Floor and Wall assemblies must be added.

Category	Minimum total points for wall + floor assembly	Minimum points for the floor assembly alone
A	<3	
B1	3	1
B2	5	1
B3	6	1
C1/2	7	2

The build categories correspond to a fire behaviour, with a predetermined performance when exposed to a developed fire, based on an assumed spread of fire in an incomplete building of a specific timber frame construction.

- Category A: Standard open panel timber frame
- Category B: Reduced fire spread timber frame
- Category C: Fire spread resistant timber frame

Category B is subdivided in B1 to B3 with increasing fire resistance. Category B3 is the highest possible category for timber frame construction with FR treated wood-based products only. To achieve Category C1/2 non-combustible sheathing materials are required in some elements of the construction.

The STA guidance is available on the STA website, details of the build categories and approved assemblies are detailed in the Product Paper 4. Please refer to the STA for the most up to date information.

SMARTPLY® MAX FR

FLOOR AND WALLS SYSTEM

Different standard floor and wall systems are detailed in the STA Product Paper 4 and points allocated based on expected performance to achieve a category classification. Details are for fire robustness for separating distances only, the project design team must ensure the full solution addresses thermal, acoustics strength, durability and safety.

SMARTPLY MAX and MAX FR panels are suitable for use in the following floor and wall assemblies:

FLOOR ASSEMBLIES			
STA Referance	Floor type	SMARTPLY panel to use	STA Product Paper 4 Points
F1	Non treated open floor	MAX	0
F2	Open floor treated deck	MAX FR	1
F3	Open floor treated elements	MAX FR	2
F4	Closed floor	MAX	2
F6	Open floor with A1/A2 skin underlayer	MAX	2
F7	Closed insulated floor	MAX	2

Note: Panel thickness depends on floor design, but minimum thickness is 15mm.

WALL ASSEMBLIES			
STA Referance	Wall type	SMARTPLY panel to use	STA Product Paper 4 Points
W1	Open wall system	MAX	0
W2	Open wall system	MAX FR	2
W5	Pre-insulated panels (Insulation type FI1)	MAX FR	2
W6	Pre-insulated panels (Insulation type FI2)	MAX FR	3
W7	Pre-insulated panels (Insulation type FI3)	MAX FR	4
W8	Closed insulated panel with non-combustible internal sheathing	MAX FR	5

Notes: Panel thickness depends on wall design, but minimum thickness is 11mm for W2, W5, W6, W7 and W8. Insulation types are defined the STA Product Paper 2.

SMARTPLY® MAX FR

CATEGORY LEVELS

Based on the floor and wall types above the following category levels can be achieved.

STA Build category		Floor Assemblies					
		F1	F2	F3	F4	F6	F7
Wall Assemblies	W1	A	A	A	A	A	A
	W2	A	B1	B1	B1	B1	B1
	W5	A	B1	B1	B1	B1	B1
	W6	A	B1	B2	B2	B2	B2
	W7	A	B2	B3	B3	B3	B3
	W8	A	B3	C	C	C	C

The fire performance categorisation can also be achieved through a combined system. SMARTPLY products have been use in various systems, please refer to the STA Product Paper 4 for all suitable systems. In addition, Product Paper 4 also detailed the full rules for assemblies in Category B and C for all components and elements of a timber frame structure.

STRUCTURAL DESIGN OF SMARTPLY MAX FR

Characteristic values for strength and stiffness of **SMARTPLY MAX FR** are given in the product Declaration of Performance (DOP). These can be used for limit state designs to EN 1995-1-1 (Eurocode 5).

When MAX FR is used structurally under service class 1 or 2 conditions, the characteristic values of the mechanical properties given in the DOP shall apply. To convert these values into design values they should be modified according to EN 1995-1-1 (Eurocode 5) for duration of load (kmod, kdef).

For permissible stress designs to BS 5268, conversion factors are given in BS 5268-2 to convert these characteristic strength and stiffness values into grade strength and stiffness values. The properties listed include bending, tension, compression and shear.

BS 8103-3 provides “deemed to satisfy” tables and other structural design guidance to enable supervisory/ technical staff of building companies to determine the thickness, type and any limitations of OSB components for floors and roofs of dwellings of limited size. A structural engineer should be employed where the building falls outside the scope of this part of BS 8103.

CONDITIONING

To minimise dimensional changes, the panels must be conditioned in the service class for the intended use by loose laying or stacking with spacers as appropriate. The length of time allowed for conditioning will vary depending on the panel and the likely condition of use. A minimum period of 48 hours is required but a longer period of up to 1 week is necessary in more extreme conditions. Failure to adequately condition panels can result in buckling of the installed OSB panels.

SMARTPLY® MAX FR

TRANSPORTATION, STORAGE & HANDLING

Careful transportation, storage and handling are important to maintain panels in their correct condition for use. Precautions must be taken during storage, prior to delivery and on site to minimise changes in moisture content of the OSB panels due to weather.

Panels must be stored on dry bases, and packs must be evenly supported on bearers with spacer sticks at regular intervals (depending on panel thickness but max 600c/c).

Packs should be sheeted with tarpaulins or other to give full cover, but at the same time to permit free passage of air around and through the pack. Care must be taken not to deform stacked panels. Bands should be cut as soon as practical and safe to avoid permanently deforming the panels. During transport and handling it is particularly important to protect edges and corners with suitable coverings to prevent damage from chafing or slings. Where the panels are required to have low moisture contents, it might not be possible to maintain suitable conditions on site other than for short periods, and deliveries must be arranged accordingly.

ASSEMBLY & ERECTION

The erection sequence and site storage must be planned to minimise the length of time that panels are left uncovered. In the case of prefabricated floor cassettes, lifting points must be clearly indicated and care needs to be taken during lifting to avoid distortion of the panels, straining of the fixings and joints and damage to edges.

Temporary protection of **SMARTPLY MAX FR** panels is highly recommended where panels are installed before the structure is adequately weatherproofed. Water must never be allowed to pool on the surface of panels, particularly at panel edges and T&G joints. A floor squeegee is recommended to remove rainwater from panels.

Alternatively, a small number of 10mm diameter holes can be drilled through the OSB to allow water to drain away, but advice should be sought from the designer to ensure that acoustic and fire performance of the finished floor assembly is not compromised.

MOISTURE CONTENT

As required by EN 300, the ex-works moisture content of SMARTPLY OSB panels is in the range of 2-12%. Moisture content of wood-based panel products varies depending on the relative humidity (RH) of the surrounding air and the temperature.

Unconditioned newly manufactured panels can increase in moisture content when installed in a building under construction and subsequently change in moisture content as the building is occupied, heated and dries out, with the consequence of dimensional changes. For guidance purposes it may be assumed that a 1% change in panel moisture content will cause a dimensional change of 0.03% in panel width, 0.02% in length and 0.5% in thickness.

SMARTPLY® MAX FR

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 woodbased 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 include 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.

UKCA FSC www.fsc.org FSC® C020700 The mark of responsible forestry CE KOMO® Cert No. 32683 Benchmark APPROVED FORMULATION WPA Benchmark APPROVED PRODUCT WPA

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SMARTPLY® MAX FR

NO ADDED FORMALDEHYDE

SMARTPLY MAX FR 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.**

The **SMARTPLY OSB** range offers an innovative range with added benefits. **SMARTPLY ULTIMA** is an extremely high-performance engineered OSB/4 wood panel, suitable for the most demanding structural applications in offsite manufacturing and construction. Find out more.

MEDITE® SMARTPLY®
INNOVATIVE TIMBER PRODUCTS

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

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The recommendations provided in this technical datasheet for the correct use of **SMARTPLY MAX FR** 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 OSB products, 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.