NSAI Agrément

IRISH AGRÉMENT BOARD
CERTIFICATE NO. 02/0093
SMARTPLY EUROPE DAC
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SMARTPLY OSB (Oriented Strand Board)

NSAI Agrément (Irish Agrément Board) is designated by Government to carry out European Technical Assessments.

NSAI Agrément Certificates establish proof that the certified products are **'proper materials'** suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2023**.

PRODUCT DESCRIPTION

This Certificate relates to SMARTPLY OSB (Oriented Strand Board) 6mm - 40 mm board for use as wall sheathing, structural flooring, heavy duty/industrial flooring, roof sarking and roof decking, in domestic dwellings. The board is manufactured from wood flakes, which are dried and blended with resin and wax and pressed into a mat. This mat is then cured, trimmed to size and sanded (if required). The board is available in OSB/3 and OSB/4 grades.

USE

The board uses include, but are not limited to, wall sheathing, structural flooring, heavy duty/industrial flooring, roof sarking and roof decking and when supported at centres not exceeding 600mm. The range includes 6 mm board for use as floor wearing surface, 9mm and 11mm wall sheathing, 15mm, 18mm, 22mm and 24mm floor and roof decking, >25mm thick board for industrial flooring applications.

MANUFACTURE AND MARKETING:

The product is manufactured and marketed by

SMARTPLY EUROPE DAC
Trading as MEDITE SMARTPLY
Belview, Slieverue,
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Tel: +353 (0) 51 851233
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1.1 ASSESSMENT

In the opinion of NSAI Agrément, SMARTPLY OSB, if used in accordance with this Certificate, meets the requirements of the Building Regulations as indicated in Section 1.2 of this Certificate.

1.2 BUILDING REGULATIONS

REQUIREMENT:
Part A – Structure
A1– Loading
The SMARTPLY OSB board contributes to the structural strength and stiffness of a floor by distributing the dead and imposed loads to the supporting structure. (See Part 3 of this Certificate).

Part B – Fire Safety
B2 – Internal fire spread (linings)
The SMARTPLY OSB board can contribute to meeting this regulation. See section 4.1 of this certificate.

B3 – Internal fire spread (Structure)
The SMARTPLY OSB board have been assessed for surface spread-of-flame rating and reaction-to-fire classification. The product can meet this requirement provided they are incorporated into a wall and roof construction as described in Section 4.1 of this certificate.

B4 – External Fire Spread
SMARTPLY OSB board when incorporated into a wall construction which is subject to a fire resistance requirement can meet the requirements of this regulation when incorporated into a wall and roof construction as described in Section 4.1 of this certificate.

Part C – Site Preparation and Resistance to Moisture
C4 – Resistance to Weather and Ground Moisture
SMARTPLY OSB board meets the requirements of this regulation when installed as indicated in Section 2.4.2, in walls, floors and pitched roofs constructed in compliance with Part 3 of this Certificate.

Part D – Materials and Workmanship
D3 – Proper Materials
SMARTPLY OSB board, as certified in this Certificate, is comprised of proper materials fit for their intended use (See Part 4 of this Certificate).

D1 – Materials & Workmanship
SMARTPLY OSB board, as certified in this Certificate, meets the requirements of the building regulations for workmanship.

Part F – Ventilation
F1 – Means of Ventilation
SMARTPLY OSB board can meet the requirements of this regulation, when installed in accordance with Part 2 and 3 of this Certificate.

F2 – Condensation in Roofs
SMARTPLY OSB board meets the requirements of this regulation, when designed and installed in accordance with Section 2.4.4 and Part 3 of this Certificate.

Part J – Heat Producing Appliances
J3 – Protection of Building
SMARTPLY OSB board, if used in accordance with this Certificate, meets the requirements of this regulation. Combustible material shall be separated by solid non-combustible material not less than 200 mm thick, from any heating appliance or from any flue pipe or opening to a heating appliance.

Part L – Conservation of Fuel and Energy
L1 - Conservation of fuel and energy
The SMARTPLY OSB board when incorporated into building elements will not significantly contribute to the thermal resistance of that element.

2.1 PRODUCT DESCRIPTION

SMARTPLY OSB board comprises wood flakes/strands bonded together with a blend of formaldehyde free resin and wax. The board is manufactured in accordance with I.S. EN 300[1], Oriented Strand Boards (OSB) – Definitions, Classification and Specifications.

2.1.1 PRODUCT RANGE

SMARTPLY OSB boards are manufactured in grades OSB/3 and OSB/4 as defined I.S. EN 300[1]. The boards are available in a range of sizes, typically 2440 x 1220, and a range of thicknesses as described in Table 1 of this certificate. Boards are generally available as square edged in all thickness ranges; alternatively, boards are available as tongued and grooved on the two long edges or on all four edges on a limited range of board sizes (See Table 1). Other sizes are available on request. The boards are available sanded if required.

2.1.2 SPECIALIST OBS PANELS

SURE STEP: a coated OSB/3 panel for increase weather resistance during construction and low slip risk in wet conditions. Determination of the slip/skid resistance according to *EN 13036-4:2011-10 Method for measurement of slip/skid resistance of a surface: The pendulum test* gave a Pendulum Test Value (PTV) 64 in dry conditions and PTV 57 under wet conditions.

PROPASSIV: a specialist airtight and high vapour diffusion factor OSB/3 panel for use as the airtightness layer, vapour control and structural panel in low energy buildings.

MAX FR B: OSB/3 panel with integrated improved reaction to fire performance to Euroclass B.

PATTRESS PLUS: Pre-cut OSB/3 panels as backing panels for light gauge steel partitions.

SITE PROTECT: Primed OSB/3 panels for use as hoarding.

2.2 MANUFACTURE

SMARTPLY OSB is produced from Irish grown, small diameter spruce and pine. Logs meeting specified requirements are debarked before passing through a flaking machine, which slices the logs into strands of predetermined dimensions and uniform thickness. The strands/flakes are dried to a low moisture content and screened to remove the fines. The dried strands then are conveyed to the blender, where they are blended with formaldehyde free resin and wax. The flakes are formed into a mat and mechanically aligned so that the outer two surface layers are in the direction of the major axis (the strength direction) and the core layer oriented at right angles to create a three layer structure. This design increases the structure and performance of the board as it distributes the strength, stiffness and spanning capacity of the panels (boards) along and across the boards. The mat is then cured under pressure and temperature, cooled, cut to size, stamped, stacked and packaged.

2.2.1 QUALITY CONTROL

The quality management systems of SMARTPLY EUROPE DAC has been assessed and registered as meeting the requirements of I.S. EN ISO 9001[2], *Quality management systems – Requirements.*

2.3 DELIVERY, STORAGE AND MARKING

SMARTPLY OSB boards are delivered banded together in Bundles up to two tonnes or as specified by customers.

The boards should be covered during transport to minimise changes in moisture content due to weather.

On site the boards must be stored clear of the ground on level bearers to prevent distortion. In common with most timber products, effective protection against the weather during storage is essential.

Each board bears the SMARTPLY logo, date of manufacture and shift code of production and Agrément Certificate number plus board grade and arrows to indicate major axis. The major axis is the direction parallel to the grain of the wood fiber in the face and back surfaces of the panel. This is generally the long dimension of the panel, unless the markings on the panel indicate otherwise. Wood is strongest in the direction parallel to grain. As a result, the strength and stiffness properties of wood based panels are greater in the direction parallel to the strength axis than perpendicular to it.

SMARTPLY OSB standard panel thickness and dimensions								
Product	Thickness (mm)	Length x Width (mm)						
		2397 x 1197	2440 x 1197	2697 x 1197	2440 x 1220	2500 x 1250	2440 x 590	2400 x 675
SMARTPLY MAX (OSB/3) - SE	9	●	●	●	●			
	11			●	●			
	15				●			
	18				●			
	22				●			
	24				●			
SMARTPLY MAX (OSB/3) - T&G2	15				●			
	18				●			
	22				●			
SMARTPLY MAX (OSB/3) - T&G4	15						●	
	18						●	
	22						●	
SMARTPLY ULTIMA (OSB/4) - SE	18				●	●		
SMARTPLY ULTIMA (OSB/4) - T&G2	30							●
SE = Square edges. T&G2 = Tongue and groove profile on the two long edges. T&G4 = Tongue and groove profile on all four edges. Other panel thickness and dimensions available on request.								

Table 1 - Product Range

2.4 INSTALLATION PROCEDURE

2.4.1 Floors - All Floors

2.4.1.1 All installation must be in accordance with the manufacturer's instructions.

2.4.1.2 SMARTPLY OSB boards when installed as flooring should be laid with the major axis of the boards crossing the joists.

2.4.1.3 The tongued and grooved or square edged boards must be nailed or screwed to all supports using ring shank nails or screws (with a minimum penetration to the support of 2.5 x board thickness) at a maximum of 150mm centres on all joists. The cross joints on the board should be staggered and the joints between the boards should be glued (on tongued and grooved boards).

2.4.1.4 In flooring applications all cut edges or square edge boards which are not supported with joists must be supported on noggins.

2.4.1.5 Unsupported edges of boards at the perimeter of a floor, and edges that are not coincident with joists, should be supported on bridging.

2.4.1.6 Provision must be made for possible expansion by providing a gap wherever boards abut any rigid upstand such as a perimeter wall, column, or fireplace surround. This gap should be not less than 10mm wide. Large floors may need a wider gap and intermediate expansion gaps to allow for a possible overall expansion of 2mm per metre length of floor.

2.4.1.7 SMARTPLY OSB Board is suitable for temporary exposure to the elements during installation; however, such exposure must be for the shortest possible period. Where longer exposure is expected SMARTPLY SURE STEP can be used for improved weather performance and low slip risk in wet conditions. Where possible therefore, flooring should not be laid until the dwelling is glazed and substantially watertight. If wetted, the boards must be allowed to dry out thoroughly before applying any floor coverings or

surface coatings or subjecting the boards to the full design load.

2.4.1.8 Single boards can be lifted manually. When boards are lifted mechanically, care must be taken to ensure that the lifting ropes or slings do not cause damage to edges.

2.4.2 Ground floors

2.4.2.1 SMARTPLY OSB boards can be installed on suspended timber ground floors or solid concrete floors provided that the floor has been satisfactorily designed to prevent the passage of ground moisture and/or radon gas to the interior of the building in accordance with Technical Guidance Document (TGD) Part C to the Building Regulations. In addition, the ground floor design must meet the thermal requirements outlined in TGD Part L to the current Building Regulations.

2.4.3 Wall Sheathing

2.4.3.1 External walls in which the boards are incorporated must include an effective vapour check on the internal side, suitable weather protection on the outside surface, ventilated cavity and damp-proof courses.

2.4.3.2 The moisture content of sheathing material is affected by the humidity conditions existing in the cavity of which it forms one face. Provision should be made for possible expansion due to the uptake of moisture. The cavity should be of conventional construction for timber frame, freely drained and ventilated.

2.4.4 Roof General

2.4.4.1 It is essential that adequate ventilation be provided in accordance with TGD Part F to the Building Regulations and that the thermal performance meets the requirements outlined in TGD Part L to the Building Regulations.

2.4.5 Roof Decking

2.4.5.1 Installation of SMARTPLY OSB boards on roof decks should be in accordance with the general provisions of sections 2.4.1.1 to 2.4.1.6 of this certificate. SMARTPLY OSB boards can be incorporated into cold, inverted, and warm flat roofs which have been designed in accordance with the requirements of BS 5250[3]. This requires a conventional timber roof decking to have a properly designed roof waterproofing systems, flashing, vapour control systems and drainage systems.

2.4.6 Pitched Roof

2.4.6.1 Installation of SMARTPLY OSB boards on pitched roof, as a continuous sarking board, should be in accordance with the general provisions of sections 2.4.1.1 to 2.4.1.6 of this certificate. SMARTPLY OSB boards can be incorporated into cold and warm pitched roofs, which have been robustly design in accordance with the requirements of BS 5250[3]. This requires a conventional timber pitched roof to have a properly designed roof waterproofing systems, flashing, vapour control systems and drainage systems.

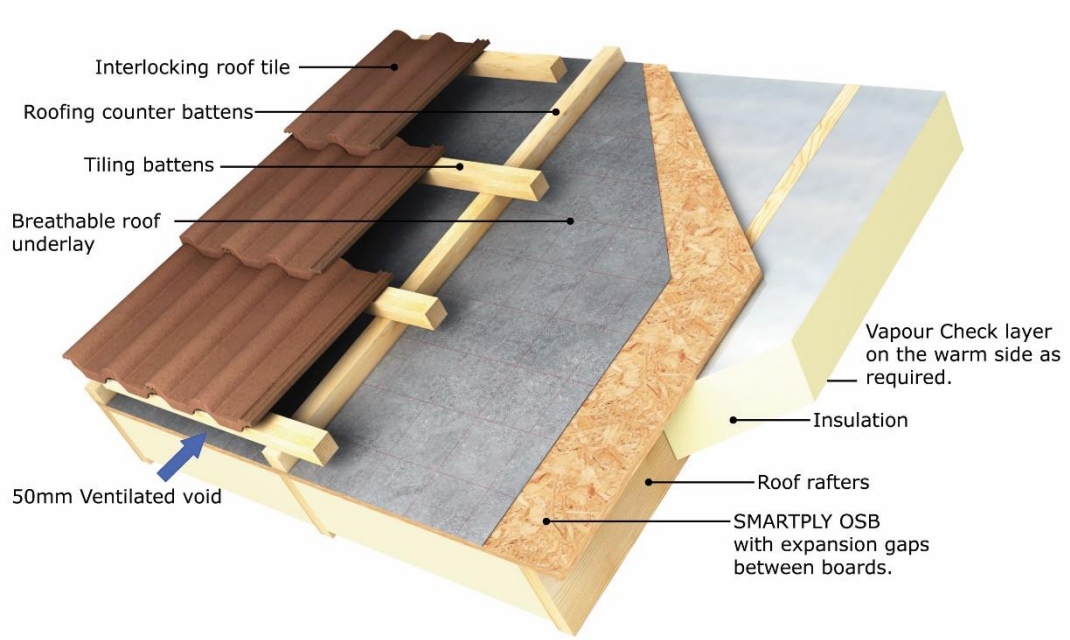

Figure 1 - Pitched Roof (Sarking)

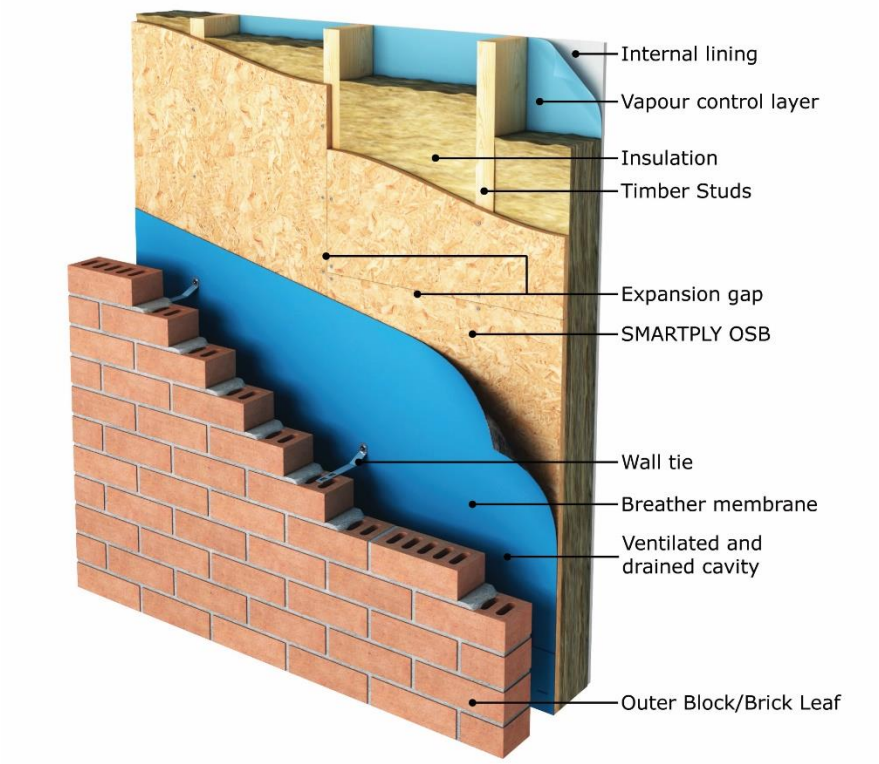

Figure 2 - Typical wall sheathing detail

3.1 General

The product has been assessed for use as structural flooring, wall sheathing and roof decking in domestic dwellings and other residential buildings for installation in environmental conditions where the moisture content does not exceed 16% for any significant period and does not exceed 20% at any time as defined in I.S. EN 1995-1-1[4] (service classes 1 and 2).

SMARTPLY OSB Board will provide a suitable substrate for floor coverings nailed or stuck down with solvent or water-based adhesives or loose laid. For all applications the provision of moisture movement gaps must be installed in accordance with the provisions outlined in I.S. EN 1995-1-1[4].

3.2 Flooring

SMARTPLY OSB Board can accept the loads associated with domestic use as defined in I.S. EN 1991-1-1[5] for designed joist spacings of not more than 600mm for the 18mm panel or 450mm spacing for the 15mm panel, provided the fixings are in accordance with clause 2.4 of this Certificate.

3.3 Wall Sheathing

When incorporating SMARTPLY OSB sheathing in timber framed walls, the safe racking resistance of the wall should be calculated in accordance with the guidelines given in I.S. EN 1995-1-1[4] by a chartered Engineer or similarly experienced and qualified person.

The basic racking resistance for 9mm board when used with timber frame studs grade C16 (75x38mm studs at 600mm c/c) without vertical load when calculated in accordance with method B of I.S. EN 1995-1-1 shall be 3.62 $kN.m^{-1}$ for nails at 100mm spacing and shall be 2.77 $kN.m^{-1}$ for nails at 150mm spacing. The nail must have a minimum diameter of 3.1mm, length of 50mm and ultimate tensile strength of 700$N.mm^{-2}$.

3.4 Roof Decking

The board is suitable for use, with an appropriate waterproofing specification, as a roof deck having a minimum finished fall in excess of 1:80 (depending on the waterproofing specification) and where no access is provided to the roof other than that necessary for cleaning and repair.

As for conventional timber roof decking, a vapour control layer must be provided in cold roof designs to prevent damage to the structure as a result of the passage of moisture in the form of vapour from the interior of the building.

3.5 Roof Sarking

The board is suitable for use as a sarking layer subject to the same structural/environmental considerations as for roof decking. As for conventional sheet sarking systems a counter batten system and waterproof run off membrane system, must be included in roof design to ensure run off to gutters.

3.6 Structural Performance

The timber structures in which the board is incorporated must be designed and constructed to comply with I.S. EN 1995-1-1[4].

3.7 Thermal insulation

3.7.1 The thermal conductivity of the OSB/3 and OSB/4 boards are provided in the manufacture's DoP's. When calculating the thermal transmittance (U-value) of a building element which incorporates SMARTPLY OSB Board, a thermal conductivity listed in the manufacture's DoP's can be used.

SMARTPLY OSB boards can be incorporated into bridged junctions such as window jambs reveals, eaves, ground floor external wall junctions or locations which have reduced cross sectional area provided an assessment to BRE IP1/06[10] and BRE Report BR 497[11] determine that it is safe to do so. Alternatively best practice guidance as outline in the Acceptable Construction Details (ACD), published by the Department of Housing, Local Government and Heritage (DHLGH), should be followed at bridged locations.

By adopting either method outlined above, best practice when incorporating SMARTPLY OSB boards at bridged junction will be observed. This will limit thermal heat loss at these junctions and minimise the risk of mould growth arising from surface condensation.

3.8 CE marking

The manufacturer has taken the responsibility of CE marking the products in accordance with harmonised standard I.S. EN 13986[6]. An asterisk appearing on this certificate indicates that the data is available on the manufacturer's DOP.

The essential performance characteristic for OSB/3 (MAX) and OSB/4 (ULTIMA) are provided in the manufacture's DoP's.

4.1 Behaviour in relation to fire

4.1.1 The boards have a European fire class D-s2,d0* for a thickness range of 6-18mm. Therefore, when used in a construction containing a cavity the maximum cavity dimension in any direction is limited to 10 m. For larger cavities, cavity barriers are required.

4.1.2 An intermediate floor construction incorporating SMARTPLY OSB 3 board, **built in accordance with TGD B Supplement Guidance - Fig 1a and Appendix A, TGD B Vol 2 table A1 item 3(a), and TGD B 2006 table A1, item 3(a), will achieve a modified 30 min fire resistance**.

4.1.3 When classified in accordance with the requirements of I.S. EN 13501-1[7], SMARTPLY OSB board having a thickness in the range of 6-18mm will achieves a reaction to fire classification of D-s2,d0* (excluding floors). SMARTPLY OSB boards >18mm thick will have a reaction to fire classification D-s1,d0*. When used in floor construction, SMARTPLY OSB boards, having a minimum thickness >10mm will achieve a reaction to fire classification of D_{FL}-s1* (flooring).

4.1.4 Where any other form of floor construction incorporating SMARTPLY OSB board is subject to fire resistance requirements, an appropriate assessment or test must be carried out by a laboratory accredited for the test concerned.

4.2 Behaviour in relation to moisture

4.2.1 As with all timber products, OSB is subject to moisture movement. As a guide, a 1% increase in moisture content will increase the length of the OSB board by 0.02%, width by 0.03% and thickness by 0.5%.

4.2.2 In common with other timber products SMARTPLY OSB Board is subject to moisture movement. Excessive movement may result in distortion. To limit such movement S.R. CEN/TR 12872[8] recommends that panels should be conditioned in the service class for the intended end use by loose laying (for example on floors) or stacking with spacers as appropriate. Once fixed, panels should be protected from rain, dampness and accidental wetting.

4.2.3 In normal service during the period between production and installation, SMARTPLY OSB Board can be expected to increase in moisture content and generally achieve the equilibrium moisture content specified in S.R. CEN/TR 12872[8]. In all cases, the moisture movement gaps referred to in section 2.4 must be provided.

4.2.4 SMARTPLY OSB board should be protected from wetting when used in high-risk areas such as kitchens and bathrooms.

4.2.5 For the purposes of hygrothermal analysis when carrying out assessments of interstitial condensation risk analysis, the water vapour permeability values (μ-values) for the OSB/3 and OSB/4 boards can be taken from the DoP's.

4.3 Durability

4.3.1 When used in the conditions set out in this certificate, SMARTPLY OSB Board will not normally be susceptible to bacterial, fungal attack and physical degradation due to moisture.

4.3.2 Care should be taken in design, detailing and construction of buildings to ensure that moisture does not accumulate within the board. Moisture contents in excess of those stated in this Certificate may lead to failure of the material through fungal attack or physical breakdown.

4.3.3 As with all building materials, care should be taken in detailing buildings to prevent vermin and other pest infestation.

4.3.4 The service life of SMARTPLY OSB Board is dependent upon the environment. When installed in accordance with this Certificate it will have a life at least equivalent to that expected from wood-based sheet materials.

4.3.5 SMARTPLY OSB Board is easily cut and fixed using conventional woodworking tools. For better performance, the use of tungsten carbide tooling is recommended.

4.3.6 The boards can withstand normal site handling and fixing; if damaged they must not be used.

4.4 Tests and assessments

4.4.1 The factory production control system in place for the manufacture of SMARTPLY OSB board have been fully assessed to I.S. EN 13986[6].

4.4.2 To indicate the long-term performance of the boards, tests were carried out on OSB/3 boards in accordance with I.S. EN 300[1] to examine the strength loss after exposure to cyclic conditioning and for susceptibility to thickness swelling.

4.4.3 SMARTPLY OSB panels are manufactured with no added formaldehyde resins. The panels achieve a Class E1 formaldehyde specification in accordance with the test requirements outlined in Annex B of I.S. EN 13986[6].

5.1 National Standards Authority of Ireland ("NSAI") following consultation with NSAI Agrément has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this Certificate and in accordance with the manufacturer's instructions and usual trade practice. This Certificate shall remain valid for five years from date of latest revision so long as:

(a) the specification of the product is unchanged.

(b) the Building Regulations and any other regulation or standard applicable to the product/process, its use or installation remains unchanged.

(c) the product continues to be assessed for the quality of its manufacture and marking by NSAI.

(d) no new information becomes available which in the opinion of the NSAI, would preclude the granting of the Certificate.

(e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.

(f) the registration and/or surveillance fees due to NSAI are paid.

5.2 The NSAI Agrément mark and certification number may only be used on or in relation to product/processes in respect of which a valid Certificate exists. If the Certificate becomes invalid, the Certificate holder must not use the NSAI Agrément mark and certification number and must remove them from the products already marked.

5.3 In granting Certification, the NSAI makes no representation as to;

(a) the absence or presence of patent rights subsisting in the product/process; or

(b) the legal right of the Certificate holder to market, install or maintain the product/process; or

(c) whether individual products have been manufactured or installed by the Certificate holder in accordance with the descriptions and specifications set out in this Certificate.

5.4 This Certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.

5.5 Any recommendations contained in this Certificate relating to the safe use of the certified product/process are preconditions to the validity of the Certificate. However, the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this Certificate will satisfy the requirements of the Safety, Health and Welfare at Work Act, or of any other current or future common law duty of care owed by the manufacturer or by the Certificate holder.

5.6 The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.

5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certification.

NSAI Agrément

This Certificate No. **02/0093** is accordingly granted by the NSAI to **SMARTPLY** on behalf of NSAI Agrément.

Date of Issue: **June 2002**

Signed

Kevin D. Mullaney
Director of NSAI Certification

Readers may check that the status of this Certificate has not changed by contacting NSAI Agrément, NSAI, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland.
Telephone: (01) 807 3800. Fax: (01) 807 3842. www.nsai.ie

Revisions

- **21 December 2023:** The addition of OSB/4 grade

Bibliography

[1] I.S. EN 300:2006, Oriented Strand Boards (OSB) - Definitions, classification and Specifications

[2] I.S. EN ISO 9001:2015, Quality management systems – Requirements

[3] BS 5250:2021, Management of moisture in buildings - code of practice (Incorporating corrigendum No. 1).

[4] I.S. EN 1995-1-1:2005+NA:2010+A1:2013, Eurocode 5: Design of timber structures - Part 1-1: General – Common rules and rules for buildings

[5] I.S. EN 1991-1-1:2002, Eurocode 1: Actions on structures - Part 1-1: General actions - Densities, self-weight, imposed loads for buildings (including Irish National Annex:2013)

[6] I.S. EN 13986:2004 +A1:2015, Wood-based panels for use in construction - Characteristics, evaluation of conformity and marking.

[7] I.S. EN 13501-1:2018, Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

[8] S.R. CEN/TR 12872:2014, Wood-based panels - Guidance on the use of load-bearing boards in floors, walls and roofs

[9] I.S. EN 1058:2009 Wood-based panels - Determination of characteristic 5-percentile values and characteristic mean values

[10] BRE IP1/06:2006, Assessing the effects of thermal bridging at junctions and around openings

[11] BRE Report BR 497:2016, Conventions for calculating linear thermal transmittance and temperature factors

[12] I.S. EN ISO 12460-5:2015, Wood-based panels - Determination of formaldehyde release - Part 5: Extraction method (called the perforator method)