

Front Cover Image: Installation Phase, Arora Ballroom, InterContinental London – The O2, Greenwich, London.

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PRODUCT OVERVIEW

Featured Project:

InterContinental London – The O2, Greenwich, London

Located next to the O2 Arena, the new £121m hotel is part of the development of a 7.6 acre site on Greenwich Peninsula. The 5-star hotel is now operated by InterContinental Hotel Group and features Europe's largest column free ballroom.

The massive 3012 sqm of space can hold up to 3000 people.

"We replaced a double layer of board with a single layer of LaDura. It has superior impact and sound insulation properties which achieved all of the performance criteria we needed."

Stuart Clark, Design Manager, Balfour Beatty.

Sector: Hotel

Project value: £121m

Designer: Grove Developments

Architect: RTKL

Contractor: Balfour Beatty
Sub-contractor: Errigal Contracts
Siniat innovations: LaDura
Finished: January 2016

If you have been tasked with creating a partition which needs to withstand more than average wear and tear, you might have turned to a gypsum fibreboard, traditional concrete blockwork or even multiple layers of plasterboard.

Your choice is now much easier. LaDura – from the range of Siniat performance boards – can meet the highest duty rating ('Severe') from a convenient single layer 12.5mm system.

By adding wood particles to a high density gypsum core, our development teams have created a strong and sustainable lightweight plasterboard, that can meet the regulations for fire, acoustic, moisture and impact performance.

LaDura is easy to cut by simply scoring and snapping and can eliminate the need for pattressing further simplifying installation.

DESIGN BENEFITS

Superior strength provides high impact resistance

LaDura is a lighter alternative to gypsum fibreboard where extra durability is required. Ideally suited for sports halls, corridors, hospital wards and stairwells.

We have added wood particles to plasterboard to reinforce the gypsum core, strengthening the board, giving greater impact and pull out resistance but importantly having minimal impact on weight.

LaDura has excellent fire, sound, impact and moisture performance, allowing the specification of just one board type per project.

It is particularly suitable and cost-effective for:

- Schools
- Hospitals
- Hotels
- Student accommodation
- Multi-residential
- Retail environments
- Offices



Choosing LaDura is useful for:

- Creating partitions for busy corridors and internal walls
- Delivering a space able to withstand heavy wear and tear
- Internal walls which need to accommodate heavy hung loads.









Photograph courtesy of Gilling Dod Architects

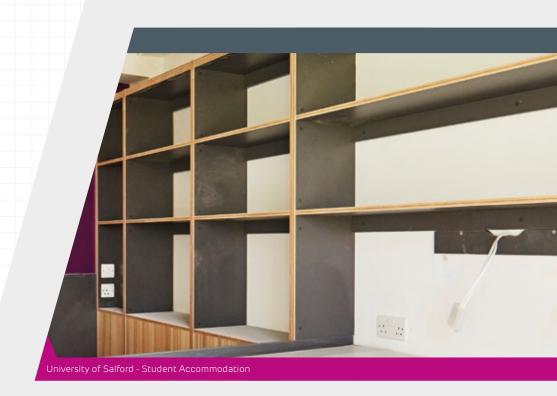
DESIGN BENEFITS

All the performance you need in one board

Simplifying your partition design is easy with LaDura. LaDura performs well across all performance requirements, from fire and sound insulation to excellent moisture resistance. Plus a severe duty rating, in just a single layer system.

"There are 1,367 bedrooms in this project. Rooms within close proximity of each other need good sound proofing. For students with a busy study and social schedule, getting the acoustics right between the bedrooms was a key consideration. LaDura offered high levels of sound insulation, plus it had the added benefit of being durable, so will stand up to heavy wear and tear."

Clayre Massey, Sheppard Robson University of Salford Project.

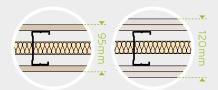


With additional acoustic performance

A repeat booking for a hotel or being able to study for an exam in your student accommodation is dependent on quiet surroundings. The dense LaDura board offers excellent sound insulation of some $50R_WdB$ from a single layer partition system, compared with just $49R_WdB$ from a double layer Siniat Standard board system.

Single system LaDura LDP004 compared to Siniat Standard board double layer system RCP 046.

Thinner Partitions = more net floor space



Single system LaDura LDP008 Double layer standard board system RCP 046

The density of LaDura enables designers to create a thinner partition to maximise net floor space without compromising on performance – particularly attractive to hotel and multiresidential clients.

This often means a double layer of board can be replaced with single layer solution, which saves time on the installation phase and a 25mm thinner partition.

Single system LaDura LDP008 compared to Siniat Standard board double layer system RCP 046.

Direct Fixing

As LaDura is mechanically strong, fixtures and fittings like shelving, equipment and classroom whiteboards can be directly hung without fixing to pattresses, up to 15kg* per fixing.

*15mm LaDura.

The flexibility to change fixtures and fittings

LaDura's greater pull-out resistance means that fixtures and fittings can be easily changed without the need for extra pattress work. This allows the end user more flexibility.

Withstands wear and tear

LaDura has a severe duty rating which is the highest durability category awarded to a product under BS5234-2:1992. Because of its density, LaDura is resistant to the minor dents, blemishes or general wear and tear that partitions face every day, from bags and trolleys, to wheelchairs and hospital beds.

This robustness reduces on-going maintenance costs for facility providers.



DESIGN BENEFITS

Sustainability: it's sustainable, traceable and recyclable

LaDura comes from Siniat, one of the most sustainable providers of drywall solutions in the sector.

LaDura typically achieves BRE Green Guide ratings of up to A+due to it's performance on a light metal system, which can lead to savings in labour, installation time, waste and materials.

LaDura fulfils the sustainable procurement criteria of the most demanding projects. By specifying a single layer partition system over a double layer, you will have contributed to the reduction of the carbon footprint of your project.

*BES6001 Responsible Sourcing applies to 15mm LaDura.

In addition:

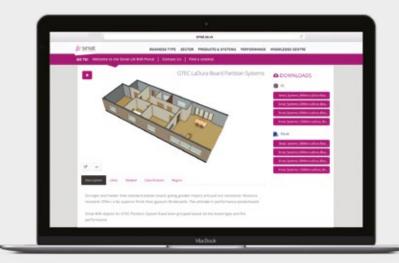
- We manufacture LaDura in the UK with the quality assurance of CE marking to BS EN 15283-1:2008+A1:2009
- LaDura is mainly comprised of gypsum, which is a non hazardous material, enclosed in a liner produced from 100% recycled paper
- The production process requires 30% less carbon than a gypsum fibreboard.



BIM Objects

We have a full suite of BIM Objects to help designers and contractors comply with Level 2. This includes dedicated LaDura objects, with a substantial amount of information included for you – to incorporate into your next BIM project.





Bespoke detailing

If you would like us to do the detail for you, our Technical Support team are LaDura experts and are happy to help.



0800 145 6033



e technical.services@siniat.co.uk



SYSTEM PERFORMANCE

Duty ratings

BS EN 5234-2:1992 comprises a series of tests which are used to establish the Duty rating of a partition. This grading is determined by how well a partition performs under a range of strength and durability tests. Once all tests are completed the partitions duty rating is graded within one of four categories; Light, Medium, Heavy and Severe Duty.

These categories can be summarised as below:

Grade	Category	Examples
Light Duty	Adjacent space only accessible to persons with high incentive to exercise care. Small chances of accident or of misuse.	Domestic accommodation
Medium Duty	Adjacent space moderately used primarily by persons with some incentive to exercise care. Chances of accident occurring and of misuse.	Office accommodation
Heavy Duty	Adjacent space frequently used by the public and others with little incentive to exercise care. Chances of accident occurring and of misuse.	Public circulation areas Industrial areas
Severe Duty SEVERE LaDura LaDura LaDura LaDura	Adjacent space intensively used by the public and others with little incentive to exercise care. Prone to vandalism and abnormally rough use.	Major circulation areas Heavy industrial areas

Table extract from BS 5234-2: 1992

In practice Light Duty partitions are only suitable for limited applications. For this reason Siniat do not recommend any Light Duty partition systems.

There are six tests within BS EN 5234-2:1992 and all six tests must be achieved at the required performance level to achieve that grading.

The tests for BS EN 5234-2:1992 are shown below with the Severe duty test grade highlighted. LaDura passed all of the following tests within the Severe Duty grade.

Annex A: Partition stiffness

A 500N (approx 50kg) load is applied to the wall and the deflection is measured. A **Severe Duty** wall will deflect less than 10mm.

Annex B: Small, hard body surface impact

A 50mm steel sphere weighing 3kg is swung into the partition and any resulting damage is recorded. The damage after a 10Nm impact must be repairable to achieve **Severe Duty**.

Annex C: Large, soft body impact

A soft, 50kg bag, approximately equivalent to a 13 year old child's weight, is swung into the partition and any damage is measured. A **Severe Duty** partition will deform less than 2mm after a 100Nm impact.

Annex D: Small, hard body perforation

The same 50mm steel sphere is swung at a specified energy depending on the grade. To pass **Severe Duty** a partition must not be perforated by a 30Nm impact.

Annex E: Large, soft body damage

The 50kg soft bag is swung multiple times into the partition to simulate impact from a person or child. It must show no structural collapse after a 120Nm impact to meet **Severe Duty**.

Annex F: Door slam

Various weights of doors are fitted into a wall and slammed up to 100 times, for a **Severe rating** there must be no damage and less than 1mm movement.

Additional tests in BS EN 5234-2:1992 measure cabinet fixture loadings, and crowd pressure to allow use as a barrier.



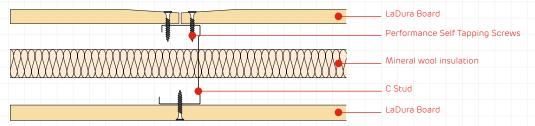


SYSTEM PERFORMANCE

The composite technology of gypsum and wood particles is key to LaDura's system performance. Its unique characteristics offer severe duty performance from a single 12.5mm boarded partition alongside fire, acoustic and moisture performance.

Combined with our external sheathing board Weather Defence, LaDura can achieve outstanding through-wall performance delivering safe and comfortable buildings. Please refer to our Weather Defence brochure for more details, you can download it at www.siniat.co.uk

Siniat single layer system



System LDP 003

System Reference	Boarding	Stud	Mineral wool	Partition thickness (mm)	Sound insulation grade R _W dB	Robustness BS EN 5234-2:1992	Fire resistance to BS EN 476 - 22:1987	Fire resistance to BS EN 1364 - 1:1999	Max height (m)
LDP 008	LaDura 1x12.5	CS70RX	25mm 16kg/m³	95	48	Severe	30	EI 30	3.7
LDP 001	LaDura 1x15	CS70RX	none	100	41	Severe	60	EI 60	4.0
LDP 003	LaDura 1x15	CS70RX	25mm 16kg/m³	100	49	Severe	60	EI 60	4.0
LDP 004	LaDura 1x15	CS70RX	50mm 16kg/m³	100	50	Severe	60	EI 60	4.0
ADP 003	LaDura 1x15	AS70RX	25mm 16kg/m³	100	51	Severe	60	EI 60	3.8
LDP 128	LaDura 1x15	CS90RX	25mm 16kg/m³	120	50	Severe	60	EI 60	5.0
LDP 138	LaDura 1x15	CS90RX	50mm 16kg/m³	120	51	Severe	60	EI 60	5.0
ADP 138	LaDura 1x15	AS90RX	25mm 16kg/m³	120	52	Severe	60	EI 60	4.7
LDP 013 Twin	LaDura 1x15	Twin CS50RX	50mm 16kg/m³	170	56	Severe	60	EI 60	5.0

For further system configurations please contact Siniat Technical Services for more information.

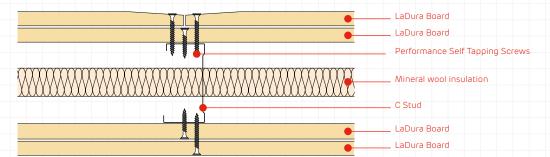


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Siniat double layer systems

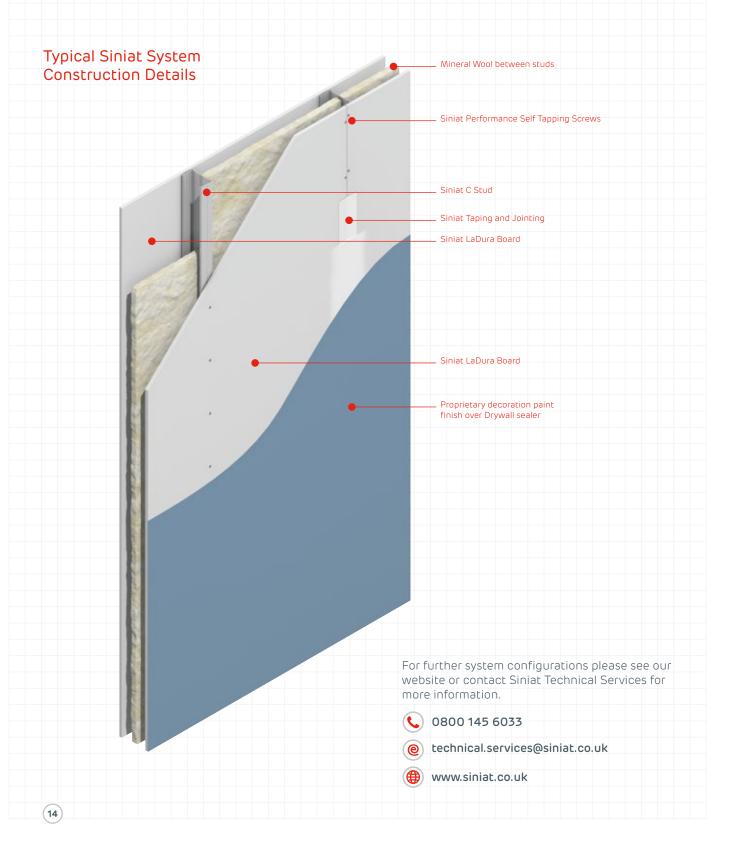


System LDP 011

System Reference	Boarding	Stud	Mineral wool	Partition thickness (mm)	Sound insulation grade R _W dB	Robustness BS EN 5234-2:1992	Fire resistance to BS EN 476 - 22:1987	Fire resistance to BS EN 1364 - 1:1999	Max height (m)
LDP 050	LaDura 1x15 + 9.5std	CS70RX	25mm 16kg/m³	120	56	Severe	60	EI 60	4.6
LDP 011	LaDura 2x12.5	CS70RX	25mm 16kg/m³	120	56	Severe	120	El 90	5.0
LDP 130	LaDura 2x12.5	CS90RX	25mm 16kg/m³	140	57	Severe	120	EI 90	6.4
ADP 130	LaDura 2x12.5	AS90RX	25mm 16kg/m³	140	60	Severe	120	EI 90	6.4
LDP 024	LaDura 2x15	CS70RX	25mm 16kg/m³	130	57	Severe	120	El 120	5.6
LDP 140	LaDura 2x15	CS90RX	50mm 16kg/m³	150	58	Severe	120	EI 120	7.2
LDP 038	LaDura 2x15	Twin CS50RX	25mm 16kg/m³	200	65	Severe	120	EI 120	6.4



TYPICAL SYSTEM CONSTRUCTION DETAILS



LaDura is easier and quicker to install than alternatives

This superior board offers a wide range of installation benefits:

- You can often achieve the performance you need with a single layer partition system
- A single layer partition requires less material and less labour than a double layer offering a cost saving in materials and labour
- LaDura is 15% lighter than gypsum fibre boards, offering manual handling benefits
- LaDura can be simply scored and snapped and does not need specialist cutting tools.
- It is easier to joint as no specialist jointing material required
- LaDura requires a lighter gauge steel and fewer screws than gypsum fibre board
- It's smooth paper liner means the final finishing stage will be much quicker, creating a further cost saving in materials and labour
- LaDura is 100% recyclable and is accepted by our GTEC Wasteline Direct Service for recycling into new plasterboard
- You can directly fix to LaDura, which eliminates the need to install patressing

But you don't have to take our word for it...

"LaDura gave us a real commercial edge on this project. A primary motivation for choosing it was its excellent duty rating, which meant we needed fewer boards, often only half as many as usual. This saved a significant amount of installation time on the project and reduced our costs."

John Reynolds, Managing Director, L Reynolds, Nottingham University Project

"When compared with the competition, LaDura came out on top, particularly as the alternative product option required cutting with a circular saw. LaDura can be cut in the traditional manner with a utility knife using the score and snap technique"

Kevin Collins, Senior Contracts Manager, RDK Drylining



LaDura is easier and quicker to install than alternatives

The installation comparison with gypsum fibre boards

Installers tell us that gypsum fibre boards are not easy to use on site. The board is heavy and can be difficult to cut. It needs a 0.6mm gauge frame and to be fixed at 250mm centres. The finishing stage is cumbersome, especially for projects which require a smooth, professional finish like multi-residential, healthcare and hotels.

We have created a brief summary of the differences in the installation steps required for LaDura versus a typical gypsum fibre board.

Grade	LaDura	Gypsum fibre board	Difference
Weight (kg/m²)	12.8kg	15kg	LaDura is 15% lighter to handle.
Cutting	Score the sheet one side with a utility knife and snap the board.	Score using a tungsten tipped knife and snap. Or use a hand or electric saw (blades should be tempered or tungsten carbide steel). A vacuum attachment is recommended.	LaDura does not need specialist or electric cutting tools.
Fixing	0.52mm metal gauge framing. Screws fixed at 300mm centres.	0.6mm metal gauge framing. Screws fixed at 250mm centres (for some boards).	LaDura requires 13% lighter gauge steel. LaDura requires up to 20% less screws.
Finishing	Paper liner provides superior finish for direct applied decoration. Tape & joint with standard jointing products	Textured board surface. For a smooth finish skim with specialist surface treatment. Tape & Joint using specialist jointing products. Square edge boards can be glued using specialist adhesive.	LaDura's paper liner provides a superior surface finish which needs less preparation before decoration. Jointing is easier using standard products.

No need for pattressing

CASE STUDY: The Sid Watkins Building, Liverpool (The Walton Centre NHS Foundation Trust)

Having worked closely with our Technical team on two previous healthcare projects, Interserve was able to demonstrate LaDura gave significant installation efficiencies, as the need for applying plywood pattresses was removed.

40,000m² of LaDura was installed on this project and the installation time assisted in delivering the building 6 weeks ahead of schedule.

"The project surpassed cost, time and quality objectives. The whole environment, from lighting, technology to amount of space ensures it is conducive to working and a great environment to work in."

Paula Bamber, Head of Facilities and Developments, The Walton Centre NHS Foundation Trust. "Hospitals have high quality – often heavy – fixtures but as the use of a room changes you're often limited to certain areas on the wall to install them. LaDura is strong enough to negate the need to go back and reinforce with plywood – meaning you can easily change the use and fittings of a room."

Kabir Salihi, Project Manager, Interserve.





Direct fixing gives flexibility

CASE STUDY: GO Interiors

When this drylining system distributor required it's own drylining solution to create robust partitions, they chose LaDura. Creating a partition between two very diverse business areas – the staff offices and the busy distribution centre – the partition needed to be robust enough to withstand the demands of customer footfall and large deliveries whilst also making the staff office space comfortable and quiet.

"Moving to a purpose built office not only gave us a blank page, but also the opportunity to question what we actually wanted the space to do for us. Internally we wanted the flexibility to move and add workstations. Using a board that would take a direct fixing meant we could add, move and re-fix, shelves, wall mounted media screens and information boards. LaDura allows us to directly fix to the wall anywhere internally, on a Siniat stud system, and seemed an obvious choice as that met all the criteria."

Guy Hamilton, Depot Manager, Go Interiors.



INSTALLATION GUIDE

Step 1: Framing

LaDura plasterboard can be installed on both steel and timber framed structures. Set studs at a maximum 600mm centres.

Step 2: Fixing

- Screw fix the board to the frame at a maximum 300mm
- Cut the board 5-8mm shorter than the floor to ceiling height and butt firmly against the ceiling

- Specialist screws need to be used for this high density board, so fix with
 - a. When using 0.52mm and 0.7mm metal gauge, use Siniat Performance Self-Tapping Screws
 - b. When using 0.9mm and 1.2mm metal gauge, use Siniat Self Drilling Drywall Screws
 - When using timber framing use Siniat High Thread Drywall Screws.

Step 3: Finishing

LaDura provides an outstanding, smooth finish.

- If taping and jointing:
- Joint with standard Siniat taping and jointing products
- Seal with Siniat Universal or Drywall Sealer prior to decoration.

If skimming:

 Ensure the surface of the board has been sealed with a PVA bonding agent and is skimmed when a second coat of PVA is still tacky.

Fixing Design Pull-out Resistance (kN) including safety factor

	Spit Driva	Spit Hollow Wall Anchor
Single layer 15mm Standard Board	0.15	0.35
Single layer 15mm Technical Board	0.2	0.4
Single layer 15mm LaDura	0.25	0.5
Double layer 15mm Standard Board	0.25	0.55
Double layer 15mm Technical Board	0.3	0.65
Single layer 15mm Standard Board + 15mm LaDura pattress	0.35	0.7
Single layer 15mm Technical Board + 15mm LaDura pattress	0.35	0.75
Single layer 15mm LaDura + 15mm LaDura pattress	0.4	0.85
Double layer 15mm Standard Board + 15mm LaDura pattress	0.4	0.85
Double layer 15mm LaDura	0.4	0.85
Double layer 15mm Technical Board + 15mm LaDura pattress	0.45	1
Double layer 15mm LaDura + 15mm LaDura pattress	0.5	1.15

CASE STUDY

Reduced complexity of build materials on site

Isaac Newton Academy Case Study – 4 years on from Installation

In 2012, 25,000m² of LaDura partitions and linings were installed in Isaac Newton Academy Ilford, London.

Four years after installation we returned to the school to ensure the partitions were withstanding the 1250 pupils who use the school every day.

Brian Bowry Premises Manager for the school confirms since the installation of the LaDura in 2012, no repairs have been required for any damage to the partitions and linings. With no damage to repair, Brian and his team can concentrate on painting the walls, so the school continues to look its best.

Sub-contractor Clark & Fenn Skanska chose LaDura for multiple reasons. The ability to carry various heavy weight items including classroom equipment with a range of different fixings, negating the need for plywood pattresses.

LaDura can also be used throughout the project, which eliminates the requirement for different board types simplifying the design.

"Better value does not mean building schools very cheaply, but creating cost-effective environments that help drive up educational outcomes, enhance teacher and pupil wellbeing, and imit future running and paintenance costs."

Jane Duncan, RIBA President 2015-2017.

LaDura also offered environmental benefits as Viv Cooke, Estimating Director explains:

"The use of LaDura offered a number of environmental benefits. By not using plywood we cut down on the use of timber, and of course we only needed to bring half the materials on site, reducing the transportation requirement."



TECHNICAL CHARACTERISTICS

Туре	Description	12.5mm Performance	15mm Performance	
General	Mass	12.8 Kg/m²	15 Kg/m²	
Mechanical properties	Young's Modulus E to DIN 18180	Longitudinal: 3500 N/mm ² Transversal: 4500 N/mm ²	Longitudinal: 3500 N/mm ² Transversal: 4500 N/mm ²	
	Breaking load in longitudinal direction	>725N	>870N	
	Breaking load in transverse direction	>300N	>360N	
	Flexural Strength in longitudinal direction	8.1 N/mm ²	6.8 N/mm²	
	Flexural Strength in transverse direction	3.4 N/mm²	2.8 N/mm²	
	Compressive Strength	16 N/mm²	16 N/mm²	
	Surface hardness (Brinell)	35 N/mm ²	35 N/mm²	
	Recommended pull-out resistance, single layer	0.4kN per fixing (SPIT CC Hollow Wall anchor, diameter 6mm)	0.5kN per fixing (SPIT CC Hollow Wall anchor, diameter 6mm)	
	Recommended pull-out resistance, double layer	0.6kN per fixing (SPIT CC Hollow Wall anchor, diameter 6mm)	0.85kN per fixing (SPIT CC Hollow Wall anchor, diameter 6mm	
Fire	Reaction to fire	A2-s1: d0 to BS EN 520:2005	A2-s1: d0 to BS EN 520:2005	
Thermal	Thermal conductivity R in accordance with DIN EN 12524	0.25 W/mK	0.25 W/mK	
	Thermal resistance R	0.05 m ² K/W	0.06 m ² K/W	
Permeability	Water vapour diffusion resistance factor to BS EN 12524	10	10	
	Water uptake to BS EN 520	5% in total mass: 180g/m² on surface (Cobb)	5% in total mass: 180g/m² on surface (Cobb)	
Moisture	Moisture content at 20°C	<1%		
resistance	Dimensional stability under moisture at 20°C	0.35mm/m from 65 to 95% RH	0.35mm/m from 65 to 95% RH	
22				

IMPORTANT INFORMATION

Handling and storage

Building work with LaDura should be planned, designed and managed in accordance with Construction Design and Management Regulations, 2015 (CDM 2015). Ensure all related hazards are identified and controlled.

LaDura is supplied on a bearer or wooden pallet system and packs should be moved using a fork lift truck or hydraulic trolley. Care should be taken to ensure that the machinery is safely capable of such movements and that the operator is trained and competent.

LaDura should be stored in dry, flat conditions.

Lifetime System Warranty – Peace of Mind

Siniat products and components are rigorously tested together. By completing this testing we are able to guarantee the technical performance of our systems throughout the project lifecycle.



Our systems when built with the correct components and materials, installed by qualified professionals in accordance with our latest literature and relevant standards, Siniat offers our invaluable Lifetime System Warranty. In the unlikely event of failure provided the system is unaltered, as originally designed and built, Siniat will reinstate the system to it's originally specified performance level – giving you and your client peace of mind.

Pack size

Board thickness (mm)	Width (mm)	Length (mm)	Boards per pallet	Board weight (kg/m²)	Pallet weight (tonnes)	Code
12.5	1200	2400	40	12.8	1.50	90452
12.5	1200	3000	40	12.8	1.87	90460
15	1200	2400	40	15.0	1.80	90453
15	1200	3000	30	15.0	1.69	90461

Physical and chemical properties appearance:

Coloured grey paper faced flat sheets that are available in a range of thicknesses and lengths, with edge profiles being taper edged. plasterboard is not a suitable product to be used as a platform or deck, it will not support body weight and therefore it is important that installers use an independent support mechanism.

Personal protection

Respiratory: The area should have adequate ventilation and/or dust extraction, if not a half face mask to BS EN 149:2001 + A1:2009 Class FFP1S should be used.

Eyes: Safety goggles to BS EN 166:2002 are recommended when dust is likely to occur.

Skin: Wear overalls and suitable clothing to avoid repeated skin contact.

Hands: To limit the effect, wear protective gloves. A barrier cream can also be applied.

Exposure controls/Personal protection

Occupational Exposure Limits: Workplace Exposure Level (WEL)

Substance	Total inhalable	Total respirable
Gypsum	10mg/m³	4mg/m³
Limestone	10mg/m³	4mg/m³
Quartz	_	0.3mg/m ³
Man Made Mineral Fibre	_	5mg/m³

Note: Based on 8 hour TWA period.

To see how LaDura can benefit your next project, call our Technical Services team on **0800 145 6033**.

GB Orderline

For placing orders, delivery enquiries, local stockists etc.

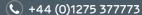
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