RESISTANT
BUILDING PRODUCTS

Innovation through Application

RESISTANT
BUILDING PRODUCTS

multi-pro

multi-proXS

render-pro

MoistSure
Tile Backer Board

PHONEWELL

RESISTANT PRODUCTS

RESISTANT Building Boards are a new age medium density Multi-Purpose Magnesium Silicate Board. A **highly durable Non-Combustible board** for use in applications requiring a combination of **sound insulation**, **moisture** and **thermal resistance** as well as **superior performance in fire**. The board will not rot and can be used as an **alternative to chipboard, plywood or wood based cement particle board**, where greater dimensional stability is required.

MANUFACTURE

RESISTANT boards are manufactured using inorganic substances, CaCO , MgO, $MgCl_2$, and alkaline resistant fibreglass mesh. The product is **naturally cured** using no energy through cold fusion unlike similar competitive products on the market which use autoclaving technology. This ensures that RESISTANT boards have a **lower impact on the environment**. They achieve their **superior strength and flexibility** by the introduction of layers of alkaline resistant glass fibre mesh. Consistent high quality of the product is maintained and monitored through a sophisticated digitally controlled process to ensure a superior finished board which always fulfils our commitment to quality assurance.

SUPERIOR ATTRIBUTES

Apart from accepting a variety of painted/polished finishes, RESISTANT boards provide an excellent compatible surface to a wide range of finishing materials i.e. paints, tiles, veneers, laminates or indeed any finishing option that comes to the creative mind of an architect or interior designer. The acceptance of RESISTANT in the highly competitive international market stands testimony to its superior attributes.

Fire Rated, Non-Flammable , Non-Combustible
Non-Combustible to BS 476 Part 4
BS EN ISO 1182 - Euro Class A1

Thermal Insulation Properties
Provides a high level of resistance to thermal movements during hot and cold cycles (Thermal Shock)

Impact Resistant
An ability to withstand abuse, including surface impact - 34 N/mm²

Low Carbon Manufacturing Process
A natural cured process with a chemical reaction using low levels of heat and a lengthy drying out stage

Moisture & Water Resistant
RESISTANT boards will not physically deteriorate when subjected to water or moisture. Provides a strong moisture barrier

Sound Insulation
Provides excellent sound insulation for walls, floors and ceilings

Rodent Resistant
Resistant to rodent infestation like mice, rats and insects

Easy and Fast to work
Easy and simple to prepare and attach. Rough surface allows application of textured, cementitious renders or direct paint / wallpaper

Mould Resistant
Unlike paper faced/wood based products, RESISTANT does not contain cellulose, limiting mould growth

Breathability
Ensures a healthy, durable working building with a natural ability to absorb and release moisture

Chemically Stable
Produced from natural inorganic raw materials, resulting in a strong, durable chemically stable board

Non-Hazardous to health
Will not cause harm to persons and/or the environment. Produced without asbestos or other inorganic fibres

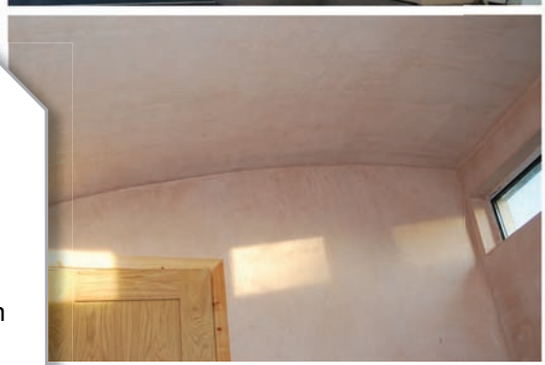
Green Cement

It is estimated that 7 – 10 % of the total man-made CO2 emissions are as a result of manufacturing Ordinary Portland Cement (OPC). OPC manufacture (CaO) accounted for 60% of total industrial process CO2 emissions in 2006. Attempts have been made to make more environmentally friendly cements in the past, but none have successfully tackled the problem of carbon emissions during production.

The temperature required to extract MgO is 3 times less than that needed to extract CaO for the manufacture of OPC. Magnesium Cements are referred to as 'Green Cements' because they reduce the CO2 impact during production by more than 50% compared to OPC s.

Resistant Magnesium Silicate Boards are manufactured by creating a slurry which is then processed into a board on individual GRP templates. The boards are then individually racked and moved into a drying room which is held at 23°C (av. room temperature) which triggers the irreversible chemical reaction 'Cold Fusion' and the finished product is produced. In the production of Resistant Building boards negligable energy is used to bond the materials unlike similar competing autoclaved products.

multi-pro



HOW IS IT BETTER..?

A1 Non-Combustible
Vapour permeable
Hygroscopic
Contribution to sound insulation
Resistant to many chemicals
Resistant to mould,insects,vermin
Low carbon manufacture

WHERE IS IT USED..?

Internal fire rated walls / ceilings
Wall cladding and infill panels
Door skins
Soffits / Dormers
Plant Rooms

DIMENSIONS

Thickness 3 - 6 - 9 - 12 mm
Sizes 1200 x 2400 / 3000mm

FINISHING

Due to the high suction of the product, it is recommended that a primer is used, preferably an acrylic, before painting or applying a skimcoat.

To maintain the hygroscopic nature of the product breathable / hygroscopic finishes are recommended like acrylic or natural based clay paints especially in air tight structures.

RESISTANT PRODUCTS

Resistant Multi-Pro is a medium density multi-purpose Magnesium Silicate board. **A highly durable, vapour permeable**, A1 Non-Combustible building board for use in applications requiring a combination of **sound insulation**, **moisture resistance** and **excellent performance in fire**.

This board can be used as an **alternative to chipboard**, **plywood or wood based cement** particle board where greater dimensional stability is required. The board is versatile and suitable for an extensive range of **internal** and **external** construction applications.

Breathability - the key to retro-fit

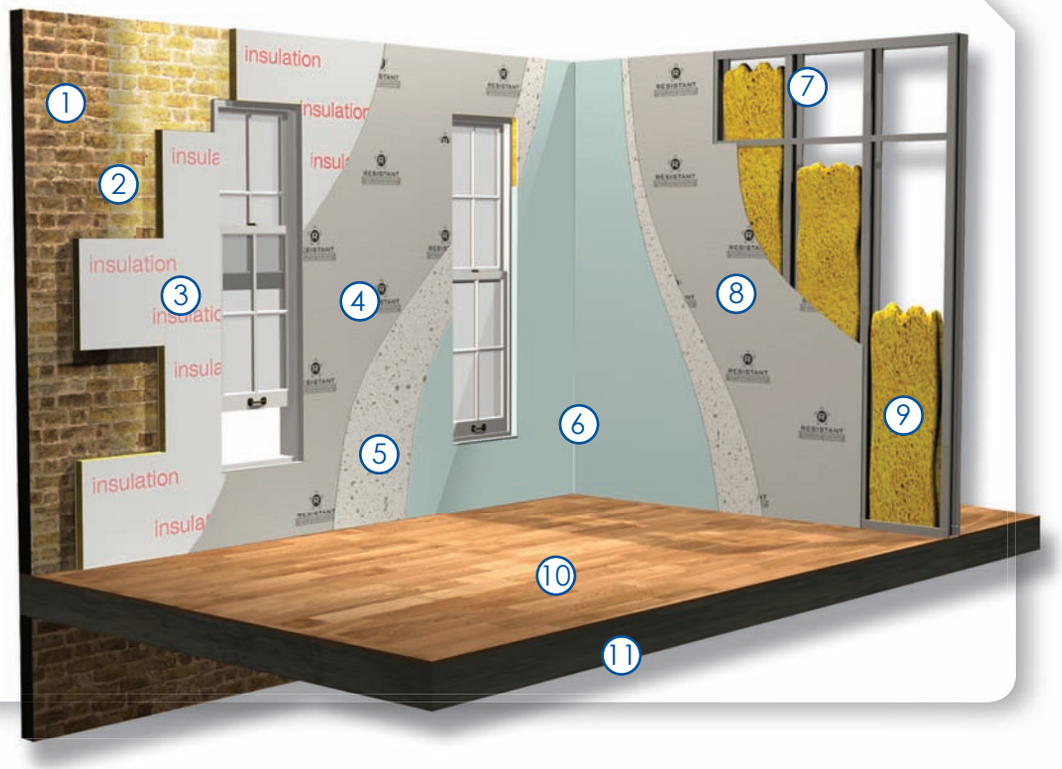
Multi-Pro is a breathable, hygroscopic and capillary active material. In today's environment these factors are becoming more and more important in the way we design new air tight dwellings and how industry is going to retrofit solid wall 'hard to heat' homes in the future.

Multi-Pro has the ability to act as an internal hygroscopic buffer helping to control humidity along with an efficient ventilation system. This coupled with its other qualities such as non-combustibility and impact resistance would make the right choice for today's and future construction methods.

Retro-Fit
Solid/Partition Walls

Key:

1 Brickwork
2 Vapour Control Membrane
3 Insulation
4 9/12 mm **Multi-Pro** foil backed
5 Interior Skimcoat
6 Interior Finish Render
7 Steel Framework
8 9mm Internal **Multi-Pro**
9 Insulation
10 Timber Flooring
11 Concrete Base Floor



Technical DATA

Test Subject	Test	Result
Density Dry (ex works)		1050 kg/m^3 (+/- 10%)
Modulus of Rupture	BSEN 310	20 Nmm^2
Modulus of Elasticity	BSEN 310	4540 Nmm^2
Impact Strength (Brinell)		34 Nmm^2
Vapour Permeability	BSEN 12086	100 mg/m^2/h
Thermal Conductivity at 50°	BSEN 594	0.26 w/m/°k
Fire Test	A1 Euroclass	Class Non-Combustible
Change in thickness (After immersion in water)	BSEN 317	0 - 0.1% Nmm^2
Tensile Strength (Perpendicular to plane)	BSEN 319	2.11 Nmm^2
Screw Withdrawal Strength	BSEN 320	1.15 KN
Cyclic tests in humid conditions	BSEN 321	
Average Thickness Swelling	BSEN 321	0
Average Tensile Strength	BSEN 321	2.04 Nmm^2
Moisture Content	BSEN 322	3.6%

HOW IS IT BETTER..?

A1 Non-Combustible
Dimensionally stable
Vapour permeable
High impact
High strength
Good edge fixing

WHERE IS IT USED..?

Closed Cell Timber Frame
Fire Rated Modular Construction
Prisons
Park Homes
Anti-Vandal Units

DIMENSIONS

Thickness	9 - 12 mm
Sizes	1200 x 2400 / 3050mm
	1200 x 2440

FINISHING

Externally, Multi-Pro XS can be faced with Plastisol Steel, GRP, acrylic based render systems or brick slips, providing any designer with unlimited options.

WHAT IS IT..?

Resistant Multi-Pro XS is an A1 Non-Combustible racking board which can be used either internally or externally; XS simply stands for 'Extra Strength'. By the addition of another layer of high strength mesh cross bonded into the board, RESISTANT have produced a product suitable for structural **racking applications** - standard BS EN 594. This added to all the benefits of the Multi-Pro board makes Multi-Pro XS the ideal choice for **timber frame system build** and **off-site construction** techniques.

For the **Off-Site** and **Modular markets**, Multi-Pro XS can be faced with Plastisol Steel, Acrylic based Render systems, or brick slips, providing your design team with unlimited options. Internally, fire rated laminated plasterboard using Cova PVC coverings is used to provide the internal finish of your choice.

The Renewable House

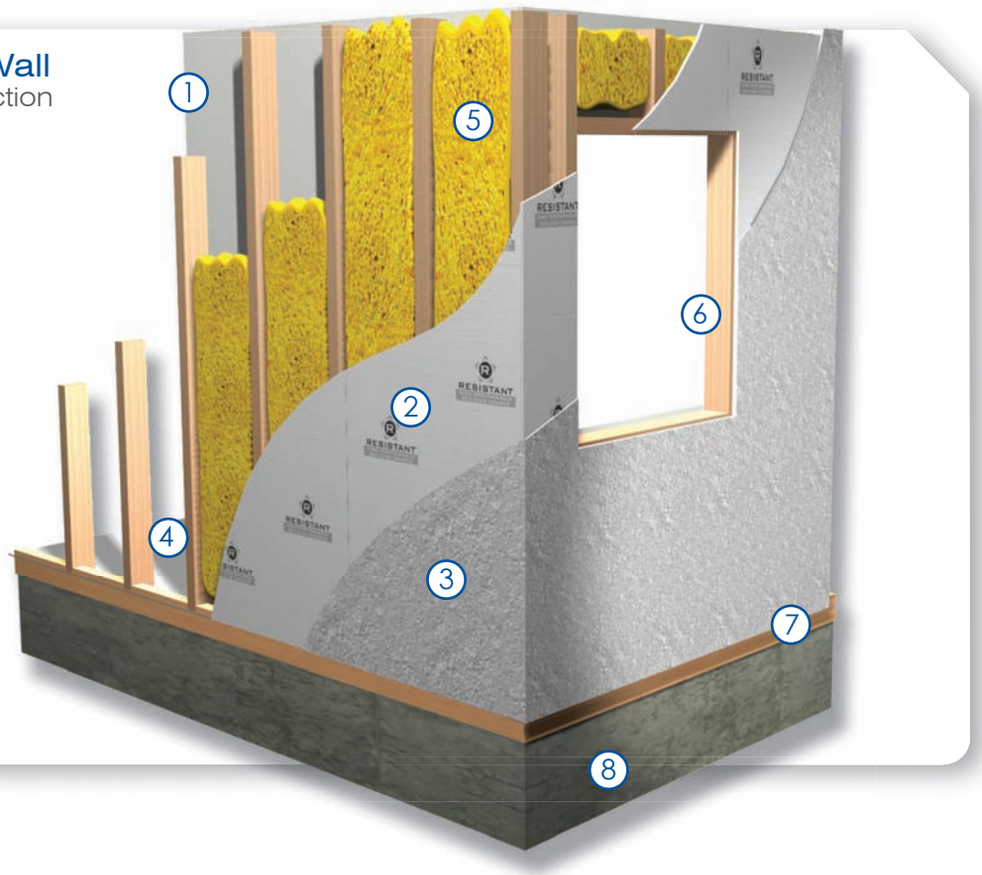
The construction industry faces challenging times. New homes must be built but at low cost and low carbon footprint. In 2006, the Code for Sustainable Homes was introduced to reduce the environmental impact of new homes. From 2016, all new homes must reach Level 6, effectively 'zero carbon'. The Renewable House shows how innovative use of renewable materials can meet all these aims cost effectively.

Multi-Pro XS has been used in the construction of the 'renewable house' situated at the BRE innovation park. It was used as the internal cladding board providing Racking, Fire Rating and a finish that could be rendered with a breathable coating.

60 minute Fire Wall
for modular construction

Key:

1 12mm Fireline plasterboard with COVA PVC finish
2 9mm **MultiPro XS**
3 Plasticol coated 0.5mm steel
4 Timber Floor
5 RWA 45 Insulation
6 Window Opening
7 Timber Floor
8 Timber Frame



Technical DATA

Test Subject	Test	Result
Density Dry (ex works)		1050 kg/m ^{3} (+/- 10%)
Modulus of Rupture	BSEN 310	17.7 Nmm^2 (along grain)
		12.4 Nmm^2 (across grain)
Modulus of Elasticity	BSEN 310	6503 Nmm^2
Impact Strength (Brinell)		34 Nmm^2
Vapour Permeability	BSEN 12086	53 mg/m^2/h
Racking Resistance	BSEN 594	PASSED
Thermal Conductivity at 50°		0.26 w/m/°k
Fire Test	A1 Euroclass	Class Non-Combustible
Change in thickness	BSEN 317	0 - 0.1% Nmm^2
Tensile Strength (Perpendicular to plane)	BSEN 319	2.80 Nmm^2
Screw Withdrawal Strength	BSEN 320	1.15 KN
Cyclic tests in humid conditions	BSEN 321	
Average Thickness swelling	BSEN 321	0
Average Tensile Strength	BSEN 321	2.72 Nmm^2
Moisture Content	BSEN 322	8.6%
Fire Resistance Steel / Timber Stud	BSEN 1364 - 1	60 minutes

For more information on the renewable house, go to: www.renewable-house.co.uk

the renewable house

render-pro

HOW IS IT BETTER..?

A1 Non-Combustible
Vapour permeable
Contribution to sound insulation
Resistant to many chemicals
Resistant to mould,insects,vermin
Low carbon manufacture
Good edge fixing

WHERE IS IT USED..?

As a Render Carrier Board for a range of Silicone, Acrylic, and Cementious Render Systems

DIMENSIONS

Thickness	9 - 12 mm
Sizes	1200 x 2400

FINISHING

It can be used and has been approved as a substrate to accept a range of thin polymeric renders and textured finishes with unlimited options. Please refer to Render Manufacturer Guidelines.

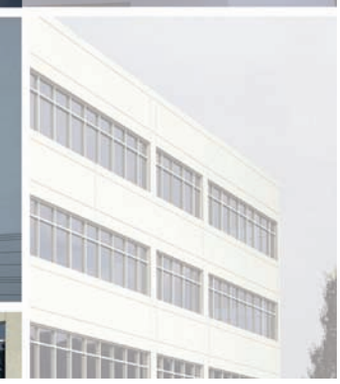
WHAT IS IT..?

Resistant Render-Pro is a high strength external Render Carrier board for use in weather exposed locations. As more and more emphasis is placed upon the ability of our structures to be more energy efficient, designers are using framed construction as the insulation carrier. Instead of using conventional methods of brick and block to create the external facades, they are turning to Render Carrier boards to fulfil this function to use less space.

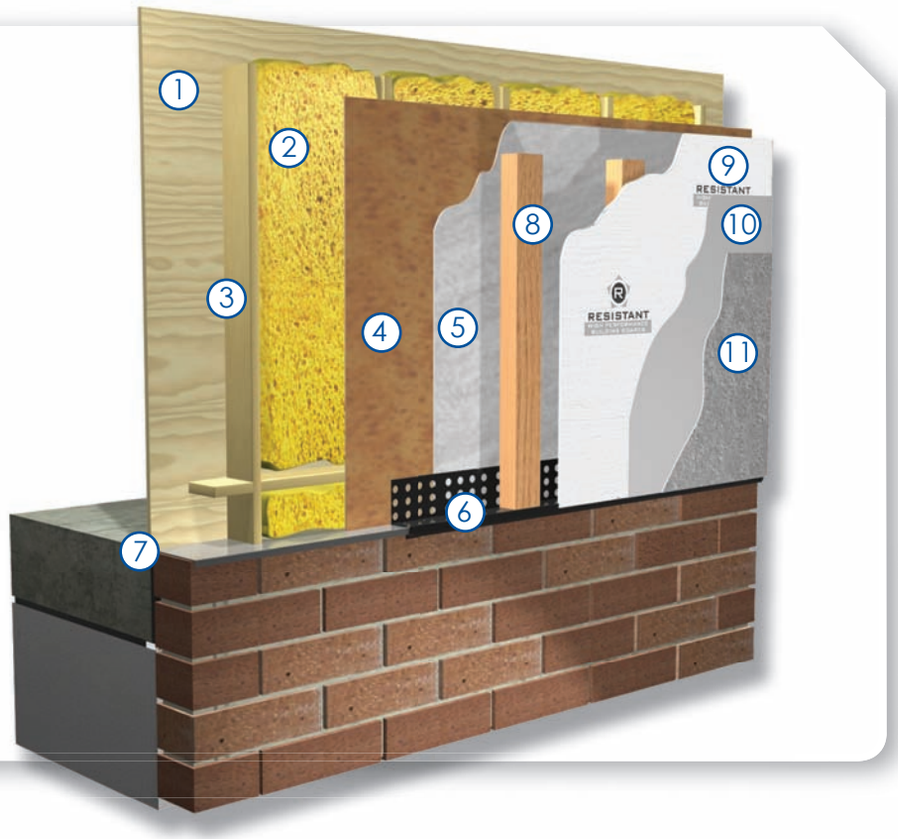
A vapour permeable A1 Non-Combustible building board with excellent dimensional stability. Render-Pro is moisture, frost, mould and impact resistant.

Speed of Build

RESISTANT boards are easy and quick to install. Their high tensile strength resists bending and prevents cracking and deformity. Their surface is suitable for direct application of a wide range of finishes, depending on the product and application. This ease of fixing and finishing eliminates the need for some trades and enables the reduction of on-site working schedules, proving to be both cost effective and time efficient.



Render Carrier
detail on framed construction



Key:

1 Inner Backing
2 Insulation
3 Timber Frame Joist
4 OSB Sheathing
5 Breather Membrane
6 PVC Vent with Insect Mesh
7 Brick Foundation
8 Timber Batten
9 9mm Render-Pro
10 Exterior Basecoat
11 Exterior Finish Render

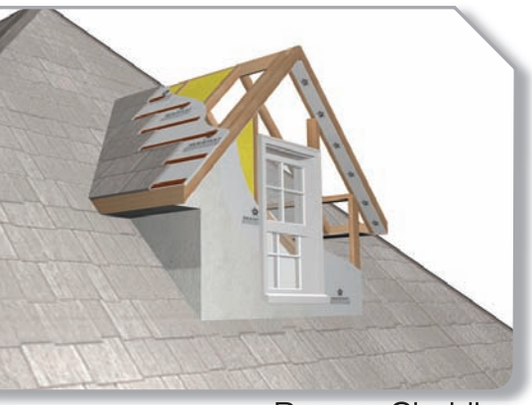
Technical DATA

Test Subject	Test	Result
Density Dry (ex works)		1050 kg/m^3 (+/- 10%)
Modulus of Rupture	BSEN 310	17.7 Nmm^2 (along grain) 12.4 Nmm^2 (across grain)
Modulus of Elasticity	BSEN 310	6415 Nmm^2
Impact Strength (Brinell)		34 Nmm^2
Vapour Permeability	BSEN 12086	53 mg/m^2/h
Thermal Conductivity at 50°	BSEN 594	0.26 w/m/°k
Fire Test	A1 Euroclass	Class Non-Combustible
Change in thickness (After immersion in water)	BSEN 317	0 - 0.1% Nmm^2
Tensile Strength (Perpendicular to plane)	BSEN 319	2.11 Nmm^2
Screw Withdrawal Strength	BSEN 320	1.15 KN
Cyclic tests in humid conditions	BSEN 321	
Average Thickness swelling	BSEN 321	0
Average Tensile Strength	BSEN 321	2.04 Nmm^2
Moisture Content	BSEN 322	8.6%

Sand + Cement cannot be applied directly to Render-Pro

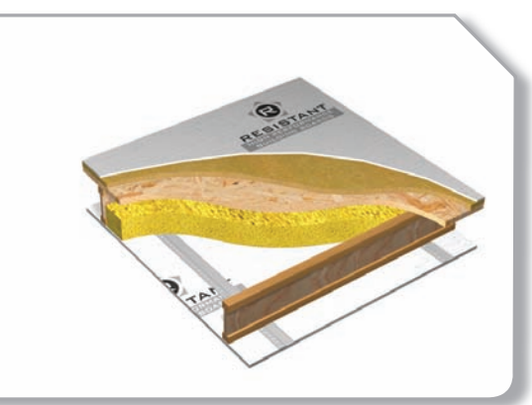
Render-Pro is an approved Render Carrier for the following systems and we continue to test with others:

limetechnology Sustainable building innovation
K REND
SAKRETE
FRANCO Finishes
alsecco
JUB



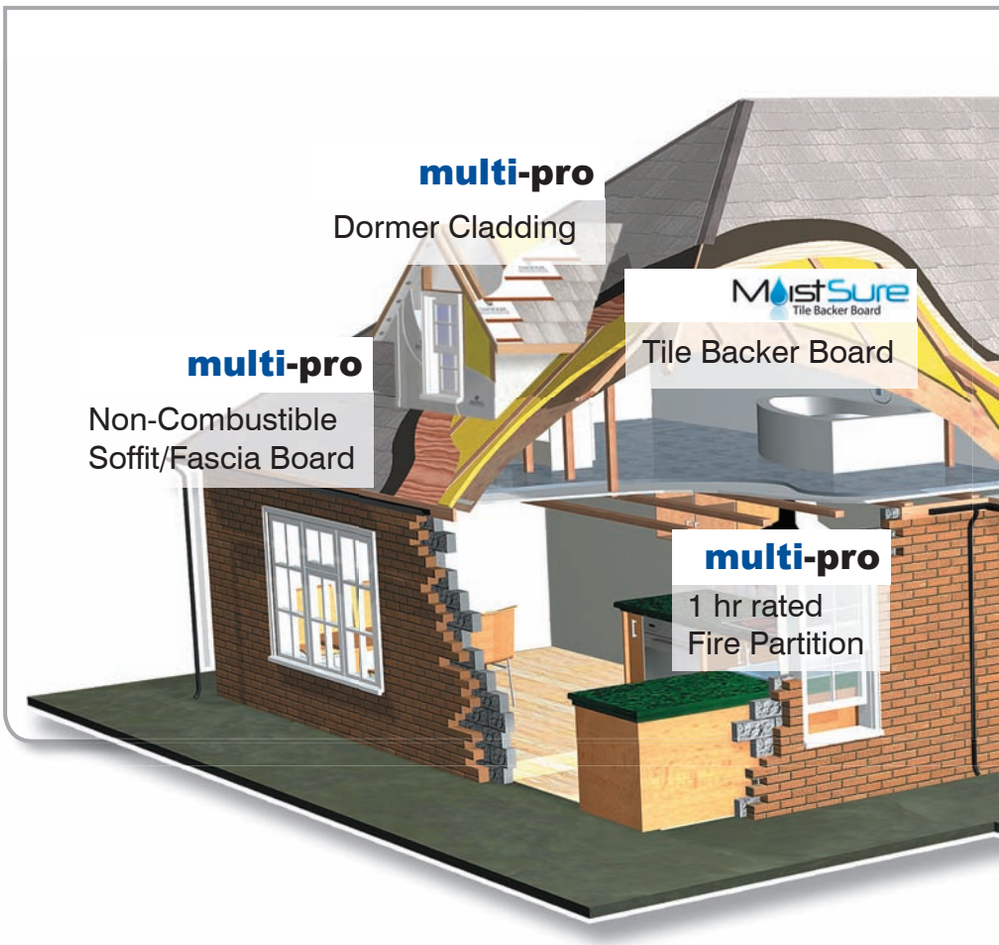
Dormer Cladding

Non-Combustible Soffit & Fascia



Acoustic Flooring System

Guaranteed Basement System



RESISTANT HOUSE

The Interactive House shows how the RESISTANT products can be used within the building infrastructure.

RESISTANT products are applicable across a broad spectrum of uses. It is a highly durable, non-combustible, breathable board for use in applications requiring a combination of sound insulation, moisture and thermal resistance as well as superior performance in fire. The board will not rot and can be used as an alternative to chipboard, plywood or wood based cement particle board, where a greater dimensional stability is required.

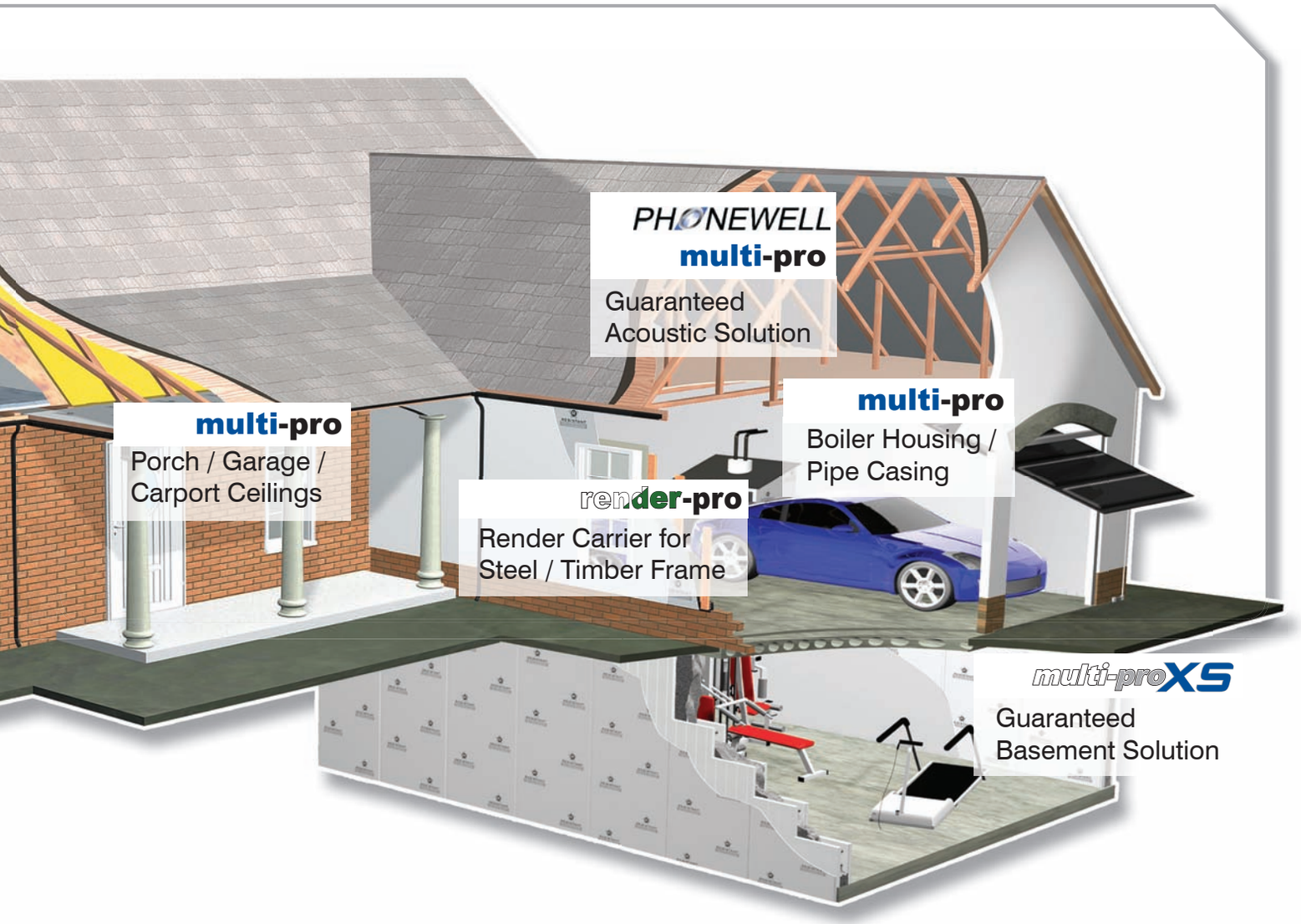
multi-pro

MoistSure Tile Backer Board

multi-proXS

PHONEWELL

render-pro

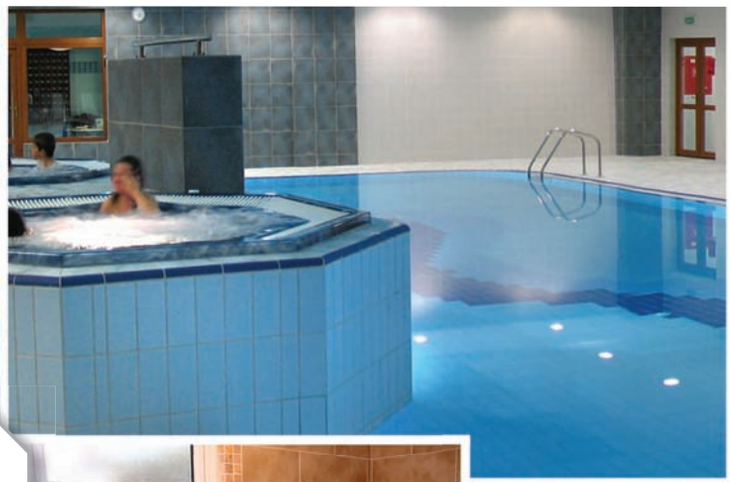
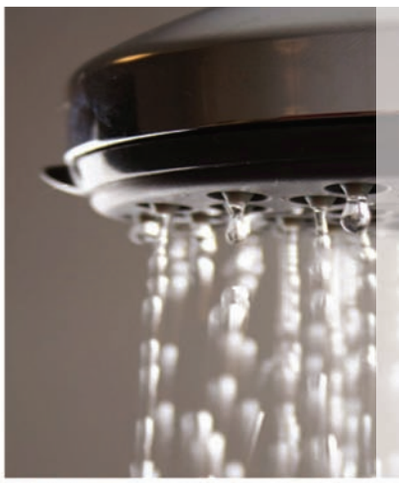
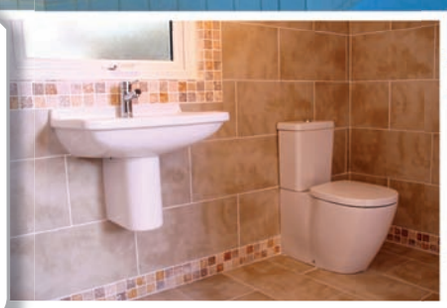
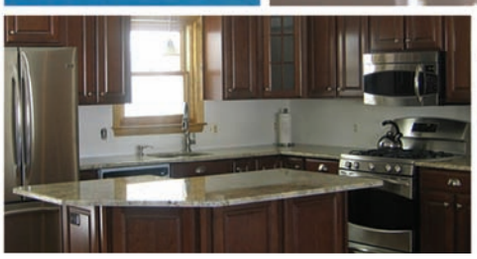


Visit the RESISTANT INTERACTIVE HOUSE, log onto:
www.resistant.co.uk

Tile Backer Board

Render Carrier

Retro-Fit Insulation


HOW IS IT BETTER..?

A1 Non-Combustible
Moisture and Water Resistant
Does not swell or degrade
Mould and Mildew resistant
Easy to fix
Handy Size
Low Carbon Manufacture

WHERE IS IT USED..?

Internal fire rated walls
Internal Wet Areas: Kitchen, Bathroom, Swimming Pools
Areas of high moisture
Suitable for underfloor heating
Substrate for various laminates

DIMENSIONS

Thickness	6 - 12 mm
Sizes	6 x 1200 x 1200 mm
	12 x 1200 x 800 mm

FINISHING

Due to the high suction of the product it is recommended that a primer is used; preferably an acrylic, before applying the tile adhesive.

The product is most effective when polymer modified tile adhesives are used. Please check with adhesive manufacturer before use.

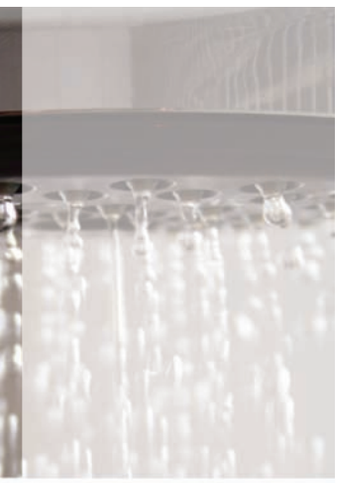
WHAT IS IT..?

MoistSure is a Magnesium **Tile Backer Board** for **Walls** and **Floors**. It provides a stable Non-Combustible, non-nutrient substrate for **internal wet areas** such as kitchens, utility rooms, bathrooms, shower cubicles and swimming pools. MoistSure is suitable for underfloor heating.

Mould Control

" Gypsum and plywood products are commonly used as a tiling substrate in showers where stud walls are common. Both these substrates are susceptible to deterioration if moisture penetrates through a crack or joint on the tiled surface. Constant moisture ingression will cause both these products to degrade over time and result in moisture related problems, like the growth of mould and mildew..."

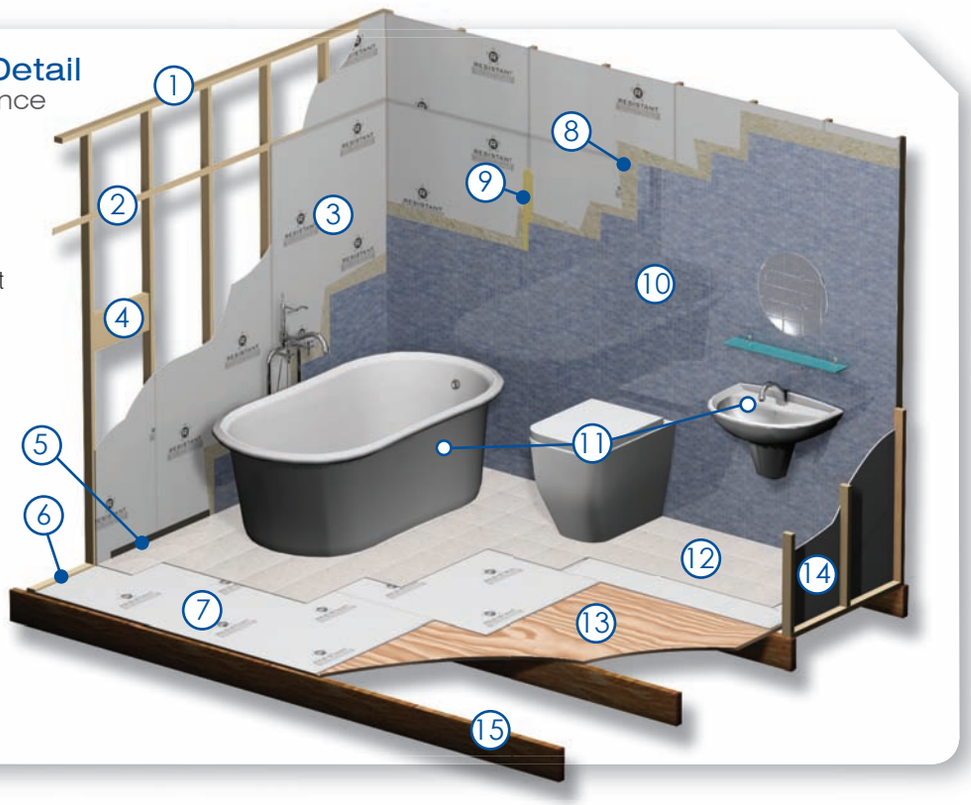
Buildings today are much more airtight than they have ever been. Often little attention is paid to the mechanical system, in particular to the fresh air supply; resulting in difficulty controlling humidity levels and condensation. Left unchecked, mould will spread at a fast rate, especially in areas with poor air circulation such as behind stud walls. This will cause health problems for those with allergies. It is good practice to design and build, where ever possible with materials which are non-nutrient and therefore reduce the risk of mould occurring. MoistSure should be used in areas of high moisture and humidity especially bathrooms and kitchens. It prevents the formation of mould and is a technically superior product in this application.



Bathroom Detail
high performance durability

Key:

1 Top Rail
2 Strap for Attachment
3 **12mm MoistSure**
4 Support for Fixture Attachment
5 GRP Angle Strip
6 Lower Rail
7 **6mm MoistSure**
8 Tile Adhesive
9 Joint Filler
10 Wall Tiles
11 Bathroom Furniture
12 Floor Tiles
13 18mm Surefloor
14 **12mm MoistSure**
15 Floor Joist



Technical DATA

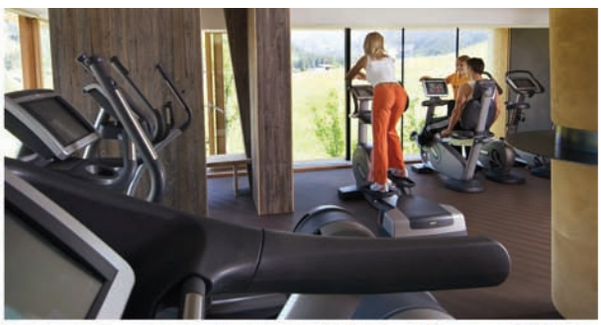
Test Subject	Test	Result
Density Dry (ex works)		1050 kg/m^3 (+/- 10%)
Modulus of Rupture	BSEN 310	20 Nmm^2
Modulus of Elasticity	BSEN 310	4.54 Nmm^2
Impact Strength (Brinell)		34 Nmm^2
Vapour Permeability		100 mg/m^2/h
Thermal Conductivity at 50°	BSEN 594	0.26 w/m/°k
Fire Test	A1 Euroclass	Class Non-Combustible
Change in thickness (After immersion in water)	BSEN 317	0 - 0.1% Nmm^2
Tensile Strength (Perpendicular to plane)	BSEN 319	2.11 Nmm^2
Screw Withdrawal Strength	BSEN 320	1.15 KN
Cyclic tests in humid conditions	BSEN 321	
Average Thickness swelling	BSEN 321	0
Average Tensile Strength	BSEN 321	2.04 Nmm^2
Moisture Content	BSEN 322	3.6%

Working in association with:

EVO·STIK

LARSEN





HOW IS IT BETTER..?

Suitable for walls, floors, ceilings
New build, conversion or refurbishment
Ideal for home and commercial sound proofing
Very effective against airborne and impact sound
Construction time greatly reduced
100% sustainable, natural, product
Breathable,odourless and pollutant free
100% recyclable after use
Simple and quick to install

WHERE IS IT USED..?

Timber Frame House Building
Timber Frame Offsite Engineering
Solid Block and Concrete Buildings
Commercial Buildings
Retrofitting, Refurbishments and Loft Conversions
Modular and Portable Buildings
Park Homes

DIMENSIONS

Thickness	15mm
Size	1200mm x 800mm

FINISHING

Covered with plasterboard, Flooring or other building substrate

WHAT IS IT..?

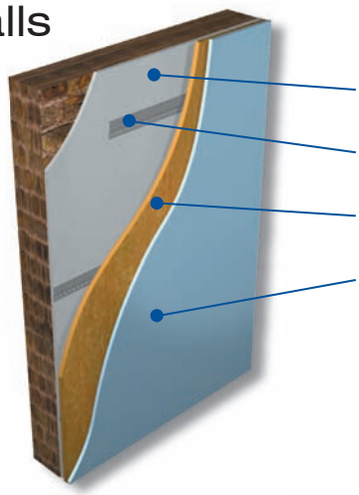
Natural, Sustainable and Eco-Friendly

Phonewell® is a unique sound proofing material which can be used on floors, walls and ceilings to reduce sound transmissions by outstanding levels.

Phonewell® is a very versatile, but simple, high-performance sound proofing board, designed to significantly reduce both AIRBORNE and IMPACT sound. It is an ecological sound insulation material for use on timber, steel or solid concrete substrates and is suitable for Partition walls, Ceilings and Floors

Phonewell® is constructed from an engineered cardboard and hardwood carcass sourced from managed sustainable forests, and filled with finely controlled sizes of silica sand. Any waste from Phonewell® can simply be composted after use, helping reduce the large problem we currently face with construction waste.

Walls



Masonry or Timber Stud

With or Without Existing Plasterboard

Resilient Bars: 16mm thick

Phonewell® Sound Insulation Board: 15mm thick

Sound Resistant Plasterboard: 12.5 - 15mm thick

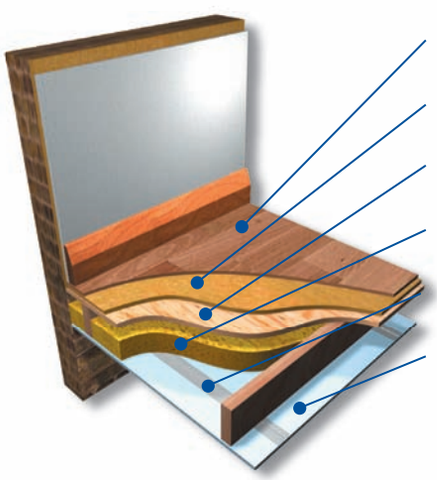
Airborne Sound

+10 to15 dB (Decibels)
Expected Improvement

(43.5 - 46mm Thick)

Note: *Higher improvement results are achieved by adding battens and mineral wool to the wall first*

Floors



Timber Joist or Concrete

Flooring

Phonewell® Sound Insulation Board: 15mm thick

Floorboards / Plywood / OSB on top of joists

Optional: High Density Mineral Wool in Cavity

Optional: Resilient Bars: 16mm thick

Sound Resistant Plasterboard:12.5 or 15mm thick

Airborne Sound

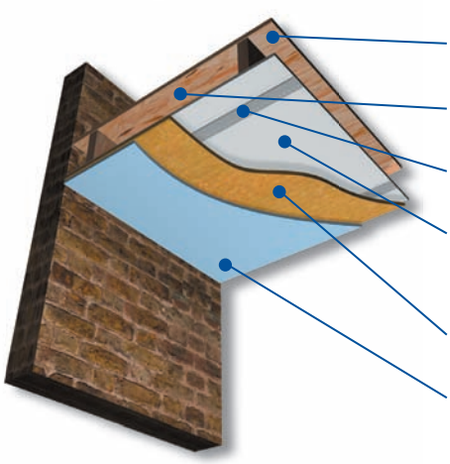
+18 to 23 dB (Decibels)
Expected Improvement

Impact Sound

+19 to 22 dB (Decibels)
Expected Improvement

Note: *Higher improvement results are achieved by adding a hard surface layer over phonewell, mineral wool in the cavity and a second layer of acoustic plasterboard*

Ceilings



Timber Joist or Concrete

Floorboards / Plywood / OSB on top of joists

Optional: High Density Mineral Wool in Cavity

Resilient Bars: 16mm Thick

With or Without Existing Plasterboard
(Subject to local Fire Regulations for Separating Dwellings)

Phonewell® Sound Insulation Board: 15mm Thick

Sound Resistant Plasterboard:12.5 - 15mm Thick

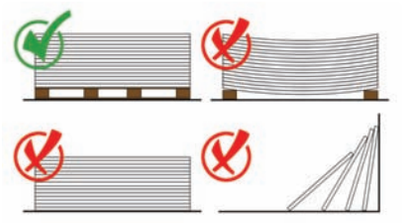
Airborne Sound

+18 to 20 dB (Decibels)
Expected Improvement

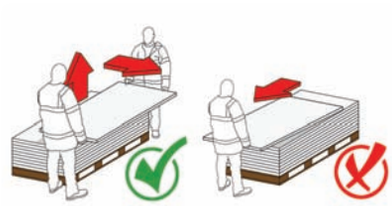
Impact Sound

+14 to 16 dB (Decibels)
Expected Improvement

Note: *Higher improvement results are achieved by inserting mineral wool in the cavity and an extra layer of acoustic plasterboard*

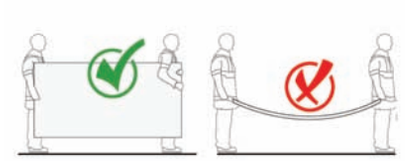


RESISTANT boards should be stored flat, raised from the ground on a pallet, in dry conditions indoors and be under cover. Boards should not be leant upright for long periods of time



Boards should always be lifted by 2 people and not dragged across each other to prevent unnecessary scratching or damage

Any moisture allowed to infiltrate between the sheets will cause permanent surface staining. They should be protected from the weather and other trades on site at all times

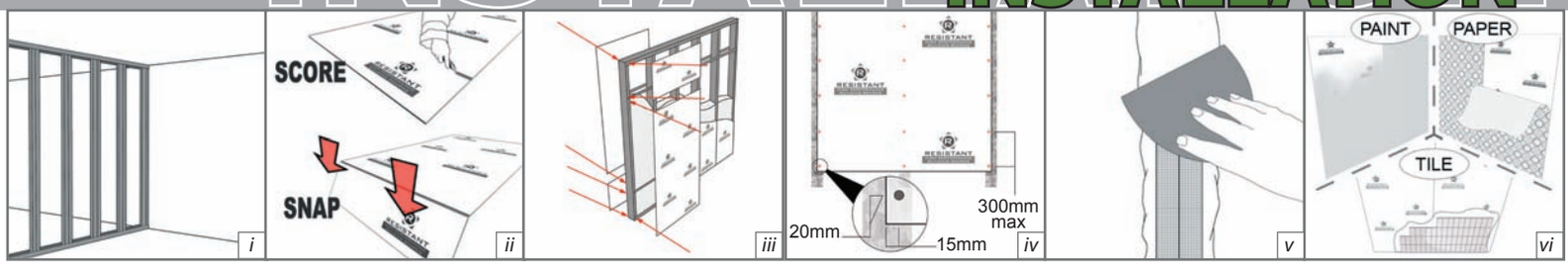


Boards should be carried on edge and extra precaution should be taken to protect the visible front edge and corners

Application	RESISTANT	Thickness
Sheathing	multi-pro	9mm / 12mm
Acoustic Panel	multi-pro PHONEWELL	6mm / 12mm
External Loaded Bearing Fames	multi-proXS	9mm / 12mm
Partitions	multi-pro	9mm / 12mm
Laminate	multi-pro	3mm / 9mm
Ceilings	multi-pro	9mm / 12mm
Soffits	multi-pro	6mm / 12mm
Wet Areas	MoistSure Tile Backer Board	6mm / 12mm
Render Carrier	render-pro	9mm / 12mm
Fire Protection	multi-pro	9mm / 12mm
Door Facings	multi-pro	3mm / 6mm
External Cladding	multi-pro multi-proXS	9mm / 12mm
Soffit Liner	multi-pro	6mm

All the requirements of the Health & Safety at work act should be met as well as any general or specific regulations applying to the area where the boards are being installed. Due to the creation of dust and debris when using power tools for cutting / shaping etc., appropriate dust extraction systems should be put in place to control these levels. Long term exposure to dust can be harmful to health. The use of protective equipment is advised at all times. *i.e. gloves / goggles*.

INSTALLATION



PREPARATION

Studwork
RESISTANT boards can be attached to either timber or steel studwork, depending on the nature of the job. Steel studwork has the advantages in that it is lighter, generally faster to install and has better acoustic properties. The layout of the partition is similar for both systems *(figure i)*.

Fixings
Stainless, Phosphate or Hot Dipped galvanised steel screws should be chosen, at all times. Screws should be attached commencing at the centre and working outwards towards the edges.

RESISTANT Board
RESISTANT boards come in a standard size of 1200mm x 2400mm (with some variations depending on product) and varying thicknesses. MoistSure boards are an exception in that they are supplied in an easy to handle size of 1220mm x 800mm (wall) and 1220mm x 1220mm (floor).

Cutting
In the case where boards may need to be custom cut to size, sheets are easily cut using the 'Score & Snap' method *(figure ii)*. Mark out the desired size on the board with a pencil and rule. Score along the mark with a utility knife, making sure to slice the glass fibre mesh, then simply press the board downwards snapping it at the 'Score & Snap' line. Smooth and tidy up edges with a light abrasive. For areas of fittings and fixtures, cut-outs should be done before installing the board. RESISTANT always recommend the use of a dust mask and eye protection.

FIXING

Wall Fixing
RESISTANT boards are fixed onto the vertical studs in a symmetrical fashion each side of the partition *(figure iii)*. They should be fixed vertically on the subframe (MoistSure boards are fixed horizontally), with fixings at 300mm maximum centres vertically and 600mm maximum centres horizontally. Space fixings a minimum of 15mm from the edge and 20mm from the corner of the board *(figure iv)*. When fixing, start at the centre and work outwards to prevent distortion within the boards. Boards should be offset so that four corners never meet at one point. If there is a chance that there could be movement in the frame or building then fix further boards allowing a 4mm gap between edges. A 6mm gap should be left above the finished floor level to allow for setting of the frame or movement. When fixing onto Timber stud, boards should be pre-drilled (if there is a chance that there could be movement in the frame, use oversized holes).

Floor Fixing
(MoistSure only)
Ensure sub-floor is not damaged and replace if necessary. Make certain there is a clean and even surface before laying RESISTANT, staggering all board joints ensuring they don't align with Sub-Floor joints. Never allow four corners of boards to meet at one point. Apply an even layer of Tile adhesive, with a suitable trowel, to the subfloor before setting RESISTANT firmly and evenly in place. Secure one board at a time, fixing screws at 300mm centres ensuring nail heads are flush with the surface .

FINISH
(Multi-Pro / Moist-Sure only)

RESISTANT boards have an attractive smooth finish surface that is immediately ready to receive most forms of decoration with little or no further preparation. There is no need for plastering, as the board can immediately accept paint, wallpaper or a tiling substrate.

Sheet Jointing & Taping
Before applying the final finish layer, the joints should be embedded with a flexible tile adhesive and 50mm alkaline resistant tape to provide extra strength *(figure v)*.

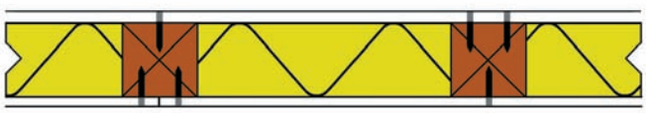
Paint / Wallpaper
Boards can be painted with emulsion or oil based paints. Advice from coatings' manufacturers regarding surface preparation, sealing and finish coat should be adhered to *(figure vi)*.

Tiling
Boards should be sealed on all sides with an approved acrylic primer. It is recommended to use flexible cement based tile adhesive on Walls and Floors. Apply tile adhesive in accordance with the manufacturer's guidelines. Bed the tiles as per good building practice, allowing normal spacing to grout once the bedding adhesive is dry .

Fixtures & Fittings
When attaching heavy objects, all fixings should be made directly into studs or into a nogging fixed firmly between the studs.

FIRE RESISTING CONSTRUCTIONS

Timber Stud

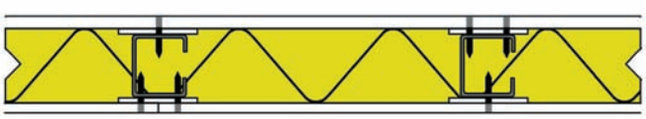


BSEN 1364-1 :1999

60 minutes fire resistance

Framing:	Nominal 60mm x 48mm timber studs at maximum 600mm centres. Noggings behind horizontal board joints and at maximum 2400mm centres
Infill	Mineral Wool (minimum 45kg/m^3, 60mm thickness)
Facade	12mm Multi-Pro XS boards fixed to both sides with 38mm long, self tapping drywall screws
Max height:	3.0 metres
Overall thickness:	84mm
Est. sound Insulation:	43 dB

Steel Stud

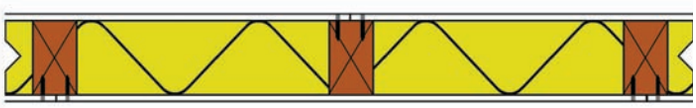


BSEN 1364-1 :1999

60 minutes fire resistance

Framing:	Nominal 70mm x 36mm x 0.5mm steel channel studs at maximum 600mm centres.
Infill:	Mineral Wool (minimum 45kg/m^3, 60mm thickness)
Joint:	6mm Multi-Pro fillets 50mm wide on both sides of studs.
Backing:	minimum 100mm x 0.6mm thick galvanised sheet strapping at horizontal joints
Facade:	12mm Multi-Pro XS boards fixed to both sides with 38mm long, self tapping drywall screws
Max height:	3.0 metres
Overall thickness:	106 mm
Est. sound Insulation:	45 dB

Timber Stud Modular



BS 476:Part21:1999

60 minutes loaded partition:

Framing:	Nominal 95mm x 35mm timber studs at maximum 600mm centres. Noggings behind horizontal board joints and at maximum 2400mm centres
Infill	Mineral Wool (minimum 45kg/m^3, 100mm thickness)
Facade	9mm Multi-Pro XS boards fixed one side and 12.5mm fireline to the other with 30mm gyroc nails. Fixings are placed around the edge of the board and every alternate stud
Internal Plasterboard	Faced with Cova ST PVC
External Multi-Pro XS	Faced with Plastisol Steel
Total Implied Load	21 kN
Max height	3.0 metres
Overall thickness	117mm
Est. sound Insulation	48 dB

RESISTANT
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Further Information
Technical Specifications, installation instructions and further product information can be obtained from the internet at: www.resistant.co.uk