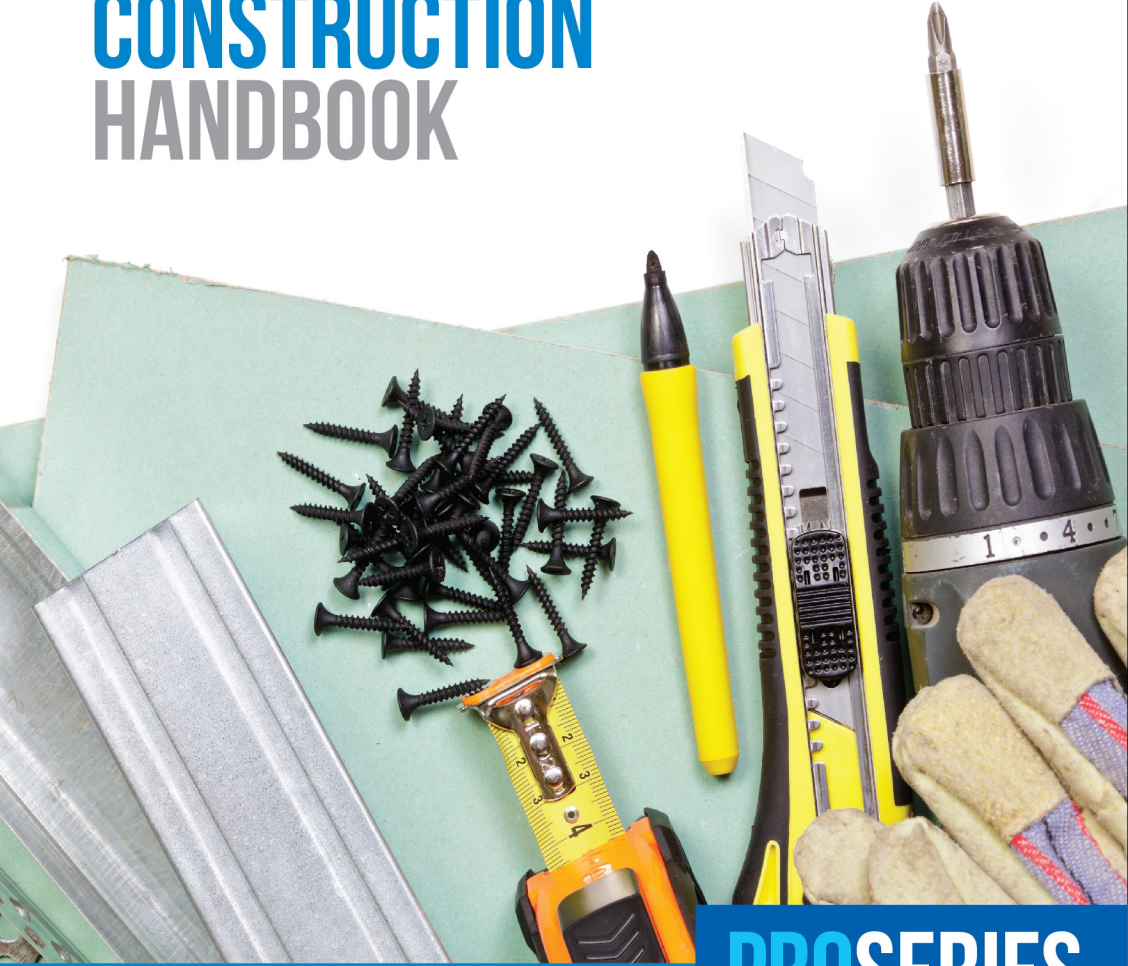


THE GYPSUM BOARD CONSTRUCTION HANDBOOK



PROSERIES



Gypsum Board Products
For Ceiling and Partition

PREMIUM BRAND PREMIUM QUALITY

HIGH PERFORMANCE
GYPSUM BOARD
BY LODHIA GYPSUM



ARISH™ Pro Series products are manufactured for life and are designed to achieve optimum performance

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SUPER GREEN SOULTION

GYPSUM PRODUCTS ARE
ENVIRONMENTAL FRIENDLY
BUILDING MATERIALS AND CAN BE
READILY INCORPORATED INTO
SUSTAINABLE
DEVELOPMENT PROJECTS

GYPSUM BOARD

Gypsum Board is the generic name for a family of panel-type products consisting of a noncombustible core and it is often called drywall, wallboard, or plasterboard. Gypsum Board is an interior wall and ceiling lining material, it has a wide range of applications in both new construction and rehabilitation work. The creativity of the architects and interior designers has resulted Gypsum Board ceilings and partitions in various decorative designs which **BUILD . BETTER . FASTER .**

ARISH™ ProBoard™ Classic

ProBoard™ Classic Gypsum Board consists of a non-combustible core of Gypsum encased in heavy duty Kraft paper liner on both sides of boards. This special extra tough paper makes Gypsum Board strong and long lasting. ProBoard™ is produced through a taxing process of mixing, shaping, solidifying, and cutting, drying, and trimming. This unique production process not only endows the Gypsum Board with numerous qualities such as being lightweight, flame resistant, quakeproof, sound insulation and heat resistance and also gives it a uniquely smooth and beautiful appearance, which is aesthetically appealing

PRODUCT SPECIFICATIONS

Thickness	Metric Size (mm)	Imperial Size (mm)	Weight (approx.) kg./sheet
9mm	1200 x 1800	1220 x 1830	15
12.5mm	1200 x 1800	1220 x 1830	19
9mm	1200 x 2400	1220 x 2440	20
12.5mm	1200 x 2400	1220 x 2440	25
15mm	1200 x 2400	1220 x 2440	30

FEATURES:

- Light weight and easy to install.
- The Gypsum core will not support combustion or transmit temperature greatly in excess of 100°C until completely calcined.
- More space efficient, easily drilled for electrical and plumbing.
- Provides smooth, seamless and crack-free wall surfaces.
- The fastest way to refurbish existing walls and also can be moved to another location.

ARISH™ ProBoard™ Classic Specifications

S/No	Parameter	Specifications	Remarks
1	Machine Direction Flexural Strength (minimum in Newton)		Testing performed according to ASTM C-473
	9mm	356	
	12.5mm	489	
2	Cross Direction flexural Strength (minimum in Newton)		Testing performed according to ASTM C-473
	9mm	133	
	12.5mm	178	
3	Hardness: (minimum in Newton)	67	As per ASTM C-473
4	Nail pull Strength (minimum in Newton)		
	9mm	267	
	12.5mm	356	
5	Humidified Deflection (mm)		
	Minimum		
	9mm	48	
	12.5mm	32	
6	Water Absorption in %	Not Applicable	

THERMAL PROPERTIES

Board Thickness (mm)	Resistance n K.m ² / W	Conductance in W/m ² . K	Specific Heat in J/kg.k
9mm	0.058	17.2	1090
12.5mm	0.079	12.6	1090

ARISH™ ProBoard™ AquaBloc

ProBoard™ Moisture Resistance Gypsum Board consists of Gypsum Core mixed with water resistant additives encased with green facing paper encased to withstand the effect of moisture and high humidity. It is an excellent choice for walls, partition and ceilings, which requires extra protection from moisture.

FEATURES & BENEFITS:

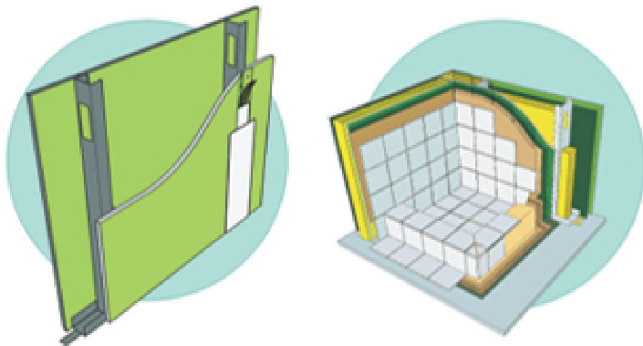
- ProBoard™ AquaBloc Gypsum Board are developed for walls, partition and ceilings, which requires extra protection from moisture.
- Light weight and easy to install.
- AquaBloc Gypsum Board will not absorb more than 5% of water by weight.
- AquaBloc will give the similar performance to a Classic board for fire rating or sound insulation.

PRODUCT STANDARD:

ASTM C 630/1390M

PRODUCT SPECIFICATIONS

Thickness	Metric Size (mm)	Imperial Size (mm)	Weight (approx.) kg. /sheet
12.5mm	1200 x 1800	1220 x 1830	20
12.5mm	1200 x 2400	1220 x 2440	27
15mm	1200 x 2400	1220 x 2440	32



ARISH™ ProBoard™ AquaBloc Specifications

S/No	Parameter	Specifications	Remarks	
1	Machine Direction Flexural Strength (minimum in Newton)	9mm 12.5mm	356 489	Testing performed according to ASTM C-473
2	Cross Direction flexural Strength (minimum in Newton)	9mm 12.5mm	133 178	Testing performed according to ASTM C-473
3	Hardness: (minimum in Newton)		67	As per ASTM C-473
4	Nail pull Strength (minimum in Newton)	9mm 12.5mm	267 356	
5	Humidified Deflection (mm) Minimum	9mm 12.5mm	15 10	
6	Water Absorption in %		5%	

THERMAL PROPERTIES

Board Thickness (mm)	Resistance n K.m ² / W	Conductance in W/m ² . K	Specific Heat in J/kg.k
12.5mm	0.079	12.6	1090



SUSPENDED CEILING SYSTEM

ProBoard™ Lay-in Suspended Ceilings provides, an elegant, yet cost effective solution and aesthetically- pleasing finish.

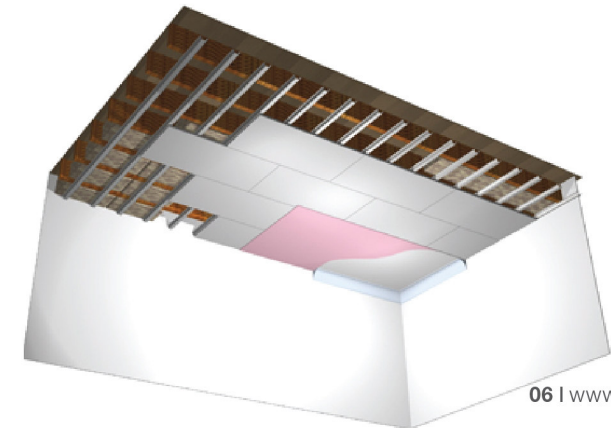
Gypsum Ceiling system is a suspended steel framing system, clad with Gypsum Boards sheets. It is mostly used in areas with the modern and innovative designs are required and also are used where the plain ceiling is required. Compared with combustible wooden ceiling, Gypsum Board ceiling provides a safer and fire resistive environment.

FEATURES:

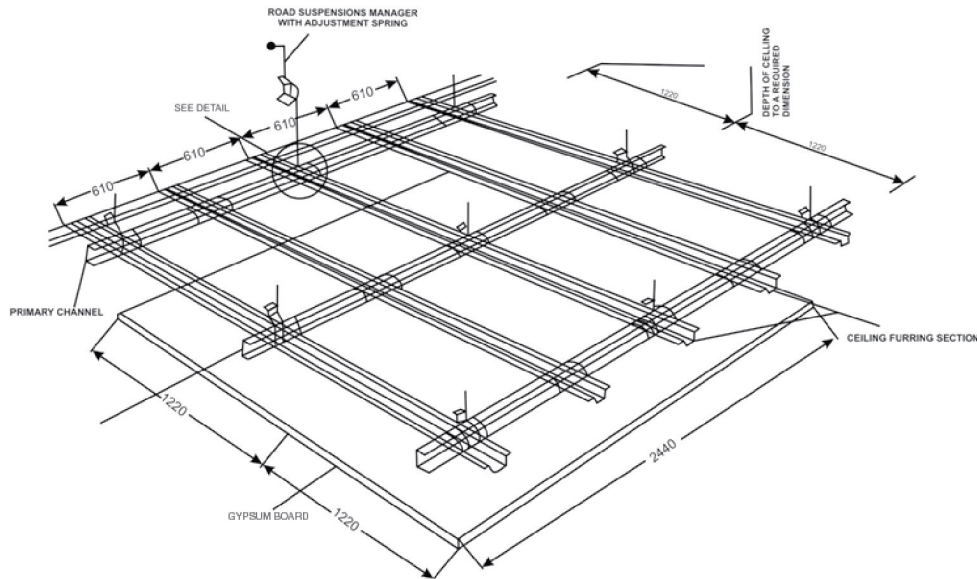
- It is lightweight, flame resistant, quakeproof, and heat resistant.
- More space efficient, easily drilled for electrical and plumbing.
- Can be cut and routed, can be decorated, painted or tiled
- Can be flexed to fit curved surfaces
- Smooth finish without visible joints.
- Easily installed by nails or screws.

APPLICATION:

All commercial and residential projects, such as: Factories, departmental stores, hospitals, high-rise office building, houses, restaurants, etc.



FURRING CEILING SYSTEM FOR PROBOARD AS RECOMMENDED BY LODHIA GYPSUM



Suspended main channel bearer with furring “top hat” section attached with preformed clips. The furring section form a battening system onto which gypsum board is screwed using self tapping dry wall screws with an electric screwdriver.

SPECIFICATION

ASTM C- 1396 Gypsum Boards (Classic Type)

FIRE

Fire resistance is closely linked to the type of Gypsum Board used. However, the standard type also provides up to 120 minutes of fire resistance.

FURRING CEILING SYSTEM RECOMMENDED FOR PROBOARD™ BY LODHIA GYPSUM

Furring suspended ceiling systems includes G.I wall angle of thickness 0.5mm, having equal Flanges of 25mm along the perimeter of ceiling. It is screw fixed to brick wall or partition walls with the help of nylon sleeves and screws at (For Imperial size Boards) 610mm (For Metric size Boards) 600mm centre to centre.

The Primary G.I channel of size 35mm (0.8mm thick with two flanges of size 10mm each) are suspended from the soffit at (For Imperial size Board) 1220mm (For Metric size Boards) 1200mm inter space with suspension wire of 3mm thickness (GI) with adjustable level clips. This is then fixed to the soffit with G.I Cleat and steel expansion fasteners.

Furring Channel (of 0.5mm thickness having knurled web 35mm and two flanges of 22mm each with lips of 10mm) are then fixed to the Primary Channel with the help of wire clip and direction perpendicular to the Primary Channel at (For Imperial size Boards) 610mm (For Metric size Boards) 600mm space.

ARISH™ ProBoard™, Gypsum Board (confirming to ASTM C 1396) of thickness 9mm or 12.5mm is then screw fixed to furring channel with 25mm ProScrew™ a Fine Thread drywall screws at 230mm spaces. **However, we recommend 9mm Gypsum Board for suspended ceiling system, which is not only cost effective but also reduces the weight of furring system and the entire weight of the building structure, since it is lighter in weight.**

Finally, the Gypsum Boards are joint at the tapered or square edges using ProTape™ ultra-thin, self adhesive Fiberglass tape which is used for covering the joints between drywall panels. Further, finish the joint with ProFiller™ hide the screw heads and allow set/dry before painting.



DRYWALL PARTITION SYSTEM:

Drywall is a cost-effective, light weight, non-demountable partition system devoid of visible joints when complete.

Drywall partition system is a good combination of traditional and new building method and it is the fastest way to refurbish existing walls. Drywall partition system is non load bearing and are constructed using drywall construction technique, which is made of durable galvanized steel, clad with Gypsum Boards sheets. Compared with wooden partition, Gypsum partition can provide a safer and fire resistive wall.

FEATURES:

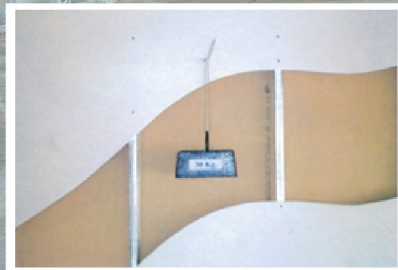
- Gypsum Board partitions are suitable for wide range of decorative finishes.
- Services & electrical cables can be easily accommodated.
- Provides smooth, seamless and crack-free wall surfaces.
- It can achieve fire resistance from 30 to 240 minutes.
- Can achieve a sound insulation of 37 to 56 db.
- The fastest way to refurbish existing walls.
- Easy & quickly installed by nails or screws.
- Can be moved to another location

APPLICATION:

All commercial and residential projects, such as: Model Houses/Apartments, Residential Houses, Office Building, Factories, Departmental Stores, Hospitals, and Restaurants, etc

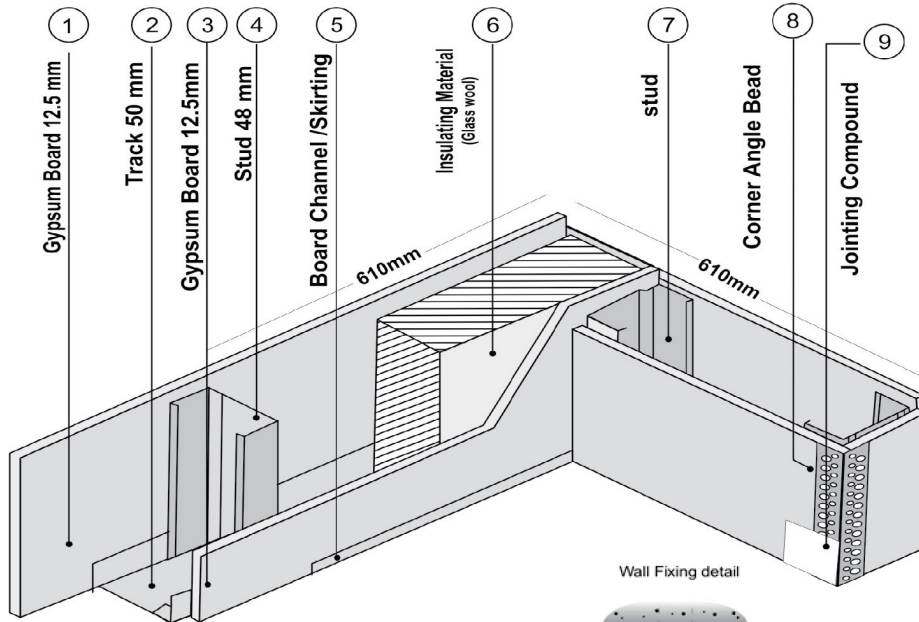
WALL SYSTEM ENHANCEMENT:

Electrical and other services are routed through the cutouts provided in the studs. Normally the services to be installed after one side of the frame are boarded. Grommets or isolating strip should be installed in the cut out to prevent abrasion of the cables. Switch boxes/socket outlets can be fixed on brackets formed from the G.I cold rolled metal sections as per the requirements. Additional framing is installed as required to support heavy fixtures i.e. Air conditioner, Cabinets etc.



GYPHUM BOARD DRYWALL PARTITION SYSTEM AS RECOMMENDED BY LODHIA GYPSUM:

75MM THICK SINGLE LAYER PARTITION



1. Gypsum Board 12.5mm thickness
2. Track Channel
3. Stud
4. Board Channel / Skirting

ESTIMATION BASE FOR 100 SQ.MT:

1220x2440x12.5mm Gypsum Board	50mm Track Channel	48mm Metal Studs	25mm Drywall Screws	Jointing Compound	Paper Tape
70 Nos	84 rmt	174 rmt	2170 Nos	110 KGs	320 mts

DRYWALL PARTITION 75MM METAL STUD PARTITION SYSTEM:

75mm thick metal stud partition includes 50mm G.I track (Floor and Ceiling channel) fixed at the head and base (0.5mm thick having equal flanges of 32mm made of G.I) then the G.I studs 48mm (0.5mm thick having one flanges of 34mm and another of 36mm made of G.I) are fitted vertically to a friction fit within the channel sections to form the frame work.

Then one layer of tapered edge 12.5mm thick ARISH™ Classic ProBoard™, (confirming to ASTM C1396) are fixed to the framing. The boards are fixed with ProScrew™ a Fine Thread drywall screws of 25mm at (For Imperial size Boards) 305mm (For Metric size Boards) 300mm centre to either side of 48mm studs (0.50mm thick having one flange of 34mm and another of 36mm made of G.I) placed at (For Imperial size Boards) 610mm (For Metric size Boards) 600mm C/C in 50mm floor and ceiling channel.

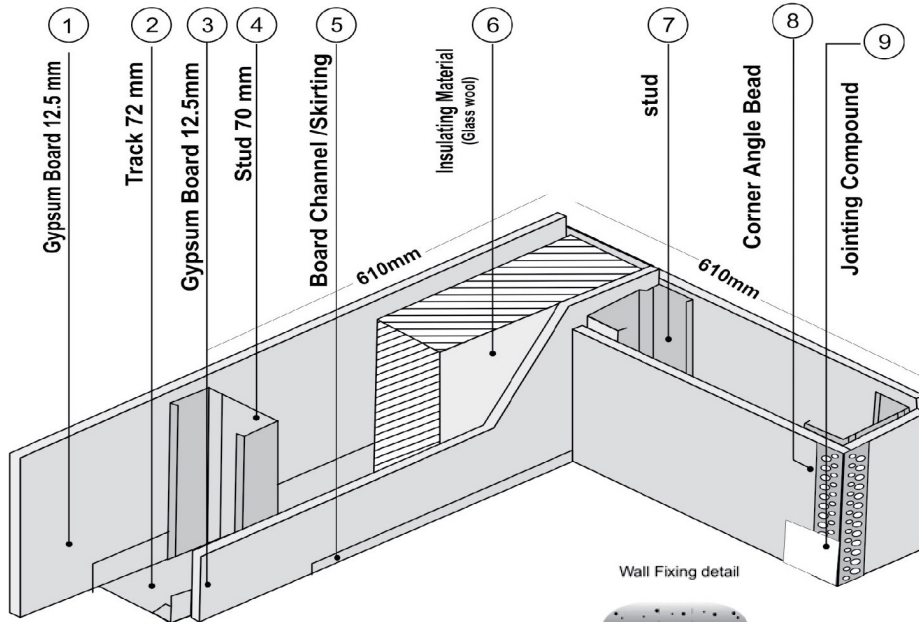
The Gypsum Boards to be fixed in a staggered manner to avoid leakage. Finally square or tapered edge boards (as per your requirement) are to be jointed with ProTape™ an ultra-fine self adhesive Fiberglass tape for covering the joints between the drywall panels. In addition ProBead™ a Flex Metal corner tape, combining steel strength with superior bond of compound to paper are used for the treatment of edges, and corners which provides excellent impact resistance, edge cracking and chipping, delivering corners. Apply three coats of ARISH™ ProFiller™, Dry-Mix or Ready-Mix and leave it for 24 hours for drying. Grind the exposed compound with abrasive paper, and the surface is ready for further decoration such as: painting or pasting wall papers.

PARTITION DETAILING:

Partition Thickness	75mm
Approximate Weight Kg/m2	22 Kgs.
Maximum Height mm	2.44 Mts.
Fire Resistance	30 mts.
Sound Insulation	34 db.
With Glass Wool	36db

GYPHUM BOARD DRYWALL PARTITION SYSTEM AS RECOMMENDED BY LODHIA GYPSUM:

97MM THICK SINGLE LAYER PARTITION



1. Gypsum Board 12.5mm thickness
2. Track Channel
3. Stud
4. Board Channel / Skirting

ESTIMATION BASE FOR 100 SQ.MT:

1220x2440x12.5mm Gypsum Board	72mm Track Channel	70mm Metal Studs	25mm Drywall Screws	Jointing Compound	Paper Tape
56 Nos	67rmt	174 rmt	2170 Nos	110 KGs	320 mts

DRYWALL PARTITION 97MM METAL STUD PARTITION SYSTEM:

97mm thick metal stud partition includes 72mm G.I track (Floor and Ceiling channel) fixed at the head and base (0.50mm thick having equal flanges of 32mm made of G.I) then the G.I studs 70mm (0.50mm thick having one flanges of 34mm and another of 36mm made of G.I) are fitted vertically to a friction fit within the channel sections to form the frame work.

Then one layer of tapered edge 12.5mm thick ARISH™ Classic ProBoard™, (confirming to ASTM C1396) are fixed to the framing. The boards are fixed with ProScrew™ a Fine Thread drywall screws of 25mm at (For Imperial size Boards) 305mm (For Metric size Boards) 300mm centre to either side of 48mm studs (0.50mm thick having one flange of 34mm and another of 36mm made of G.I) placed at (For Imperial size Boards) 610mm (For Metric size Boards) 600mm C/C in 50mm floor and ceiling channel.

The Gypsum Boards to be fixed in a staggered manner to avoid leakage. Finally square or tapered edge boards (as per your requirement) are to be jointed with ProTape™ a self adhesive Fiberglass tape for covering the joints between the drywall panels. In addition ProBead™ a Flex Metal corner tape, combining steel strength with superior bond of compound to paper are used for the treatment of edges, and corners which provides excellent impact resistance, edge cracking and chipping, delivering corners. Apply three coats of ARISH™ ProFiller™ Dry-Mix or Ready-Mix, and leave it for 24 hours for drying. Grind the exposed compound with abrasive paper, and the surface is ready for further decoration such as: painting or pasting wall papers.

PARTITION DETAILING:

Partition Thickness	97mm
Approximate Weight Kg/m2	22 Kgs.
Maximum Height mm	3000mm
Fire Resistance	30 mts.
Sound Insulation	37 db.
With Glass Wool	39db

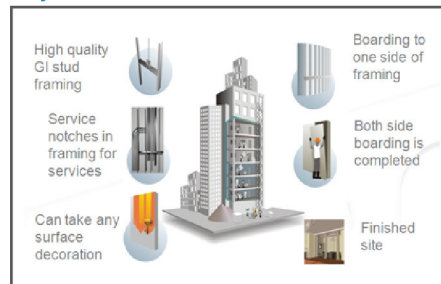
COMPARISON OF DRYWALL PARTITION AND TRADITIONAL MASONRY WALL

Parameters	Masonry Wall System	Drywall System
Usage	Durable, tolerant and suitable for external wall.	Durable, tolerant and suitable for internal wall.
Weight	180 Kg/m ²	20 - 75 Kg/m ²
Fire Protection	60 minutes fire resistance.	90 - 180 minutes fire resistance.
Acoustic Performance	35 - 40 db	35 - 80 db
Speed of Construction	14 m ² / day	40 - 50 m ² /day (3 times faster)
Flexibility of installation	Requires beam system to support the structure.	No beam system required.
Loading and storage	Difficult because heavy.	Easy because lighter.
Wall surface	It can only be smooth with skilled labor and cracks can appear.	Smooth and crack free surface.
Heat Insulation	High heat transmission (K = 0.85 Watt/m°C)	Four times lesser heat transmission (K = 0.19 Watt/m°C)
Quality of Material	Difficult to control various sources.	Standard quality control system.

Masonry Construction



Drywall Construction



ENHANCING THE BUILT ENVIRONMENT

LODHIA GYPSUM OFFERS A RANGE OF SYSTEMS TO DELIVER ROOMS AND BUILDINGS THAT OFFERS SUPERIOR LEVELS OF LIVING COMFORT AND SUSTAINABILITY.

SUSPENDED CEILING | DRYWALL PARTITION | WALL LINING

Thermal Improvement

Lodhia Gypsum ProBoard™ system achieves thermal performance for all projects; from basic regulatory requirements to the most stringent, high performance levels. Buildings that have high levels of thermal insulation cost less to run, reduce CO2 emissions and improve occupier comfort.

Acoustic Improvement

Lodhia Gypsum ProBoard system improves the acoustic performances and the acoustic environment of a building which leads to a number of occupant benefits, including enhanced student learning, improved patient recovery, optimized employee productivity and harmonious family living.



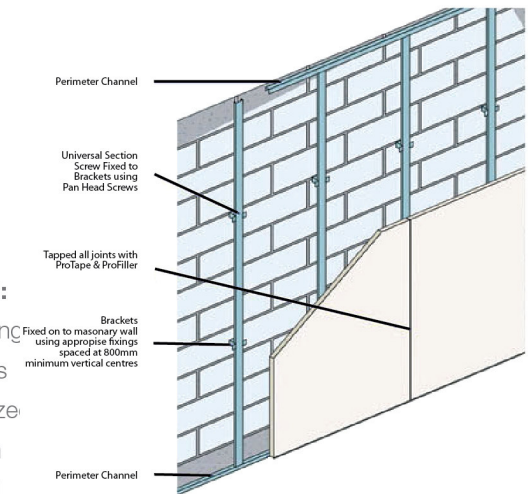


WALL LINING

ProBoard™ Lyner is a cost-effective, virtually independent metal wall lining system. This system is commonly used where the external wall or substrate is very uneven or out of plumb. Linings can also be simply be bonded or plastered directly to a wall surface.

INDEPENDENT METAL FRAME SYSTEM:

The independent framework enables wall lining to be used over all types of back ground, this system consists of fixing light weight galvanize metal frame on the masonry/block walls with Gypsum board screw fixed and joint finished



Installation of Wall lining Steps:

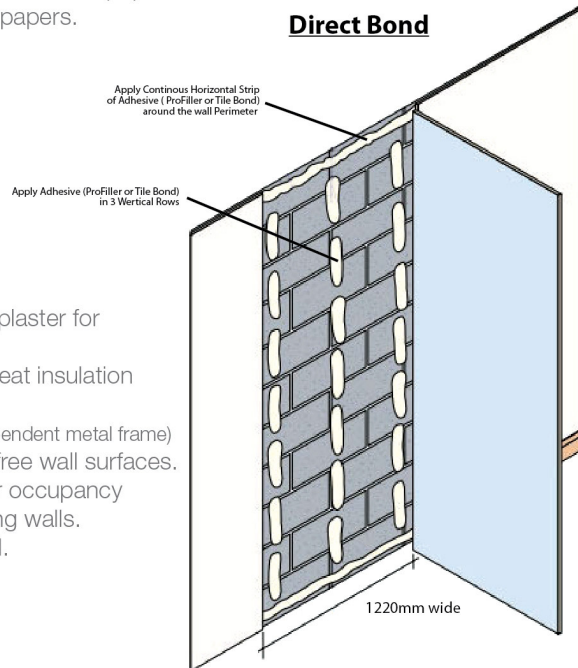
- Determine cavity depth required and mark lines to floor and ceiling to indicate positioning perimeter channel.
- Fix expansion bolt 6mm to perimeter channel, at 60cm center.
- Mark lines on the wall at 60cm intervals to indicate fixing bracket center.
- Mark horizontal lines at 80cm center to indicate fixing bracket position.
- Fix bracket with expansion bolt 6mm
- Cut channel section to the height of lining.
- Friction fit channel into perimeter channel and set inside 2 legs of bracket.
- Fix 12mm thickness ProBoard to all framing members at 30cm center using ProScrews.
- Finish board joints, with joint taping hide screw heads with ProFiller and leave it for 24 hours for drying.
- Grind the exposed compound with abrasive paper.
- Ready for Painting or pasting wall papers.

1. ADHESIVE DABS SYSTEM:

The system uses the principle of gypsum adhesive dabs to bond Gypsum boards directly to the masonry walls, giving nice appearance and crack free surface. This system is unsuitable for area subject to continuously damp or humid conditions.

Installation of Wall lining Steps:

- Determine the highest spots on the wall and plumb position to the ceiling and floor. Transfer this dimension to the room corners. Mark all with vertical lines at 1.22m interval.
- Mix drywall adhesive with clean water accordingly.
- Apply a continuous fillet of adhesive to the perimeter of the wall through the vertical lines. From dabs 50mm to 80mm wide and about 250mm long.
- Position dabs of adhesive in three vertical rows. Apply six dabs a row before placing the first board.
- Position the ProBoard™, ivory face against the dabs, with the bottom edge resting on a small piece of Gypsum board.
- Tap the board back firmly using a straightedge until it aligns with the ceiling and floor lines.
- Finish board joints, with joint taping and hide with ProFiller and leave it for 24 hours for drying.
- Grind the exposed compound with abrasive paper.
- Ready for Painting or pasting wall papers.



FEATURES:

- The faster solution of Cementous plaster for plastering walls.
- Have good acoustic, sound and heat insulation properties.
- Hides seepage damps if any (independent metal frame)
- Gives smooth, seamless & crack-free wall surfaces.
- Allow faster completion and earlier occupancy
- The fastest way to refurbish existing walls.
- Can be decorated, painted or tiled.
- Easily installed.
- Salt resistance.

Build . Better . Faster



Lodhia Gypsum's Pro Series Boards, guarantees its dry wall partitions, wall linings and ceiling systems will provide fully integrated solutions for structural fire protection, moisture resistance, and sound insulation.



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