

THE STRONGEST DRYWALL SYSTEMS FOR EXTERNAL AND INTERNAL WALLS

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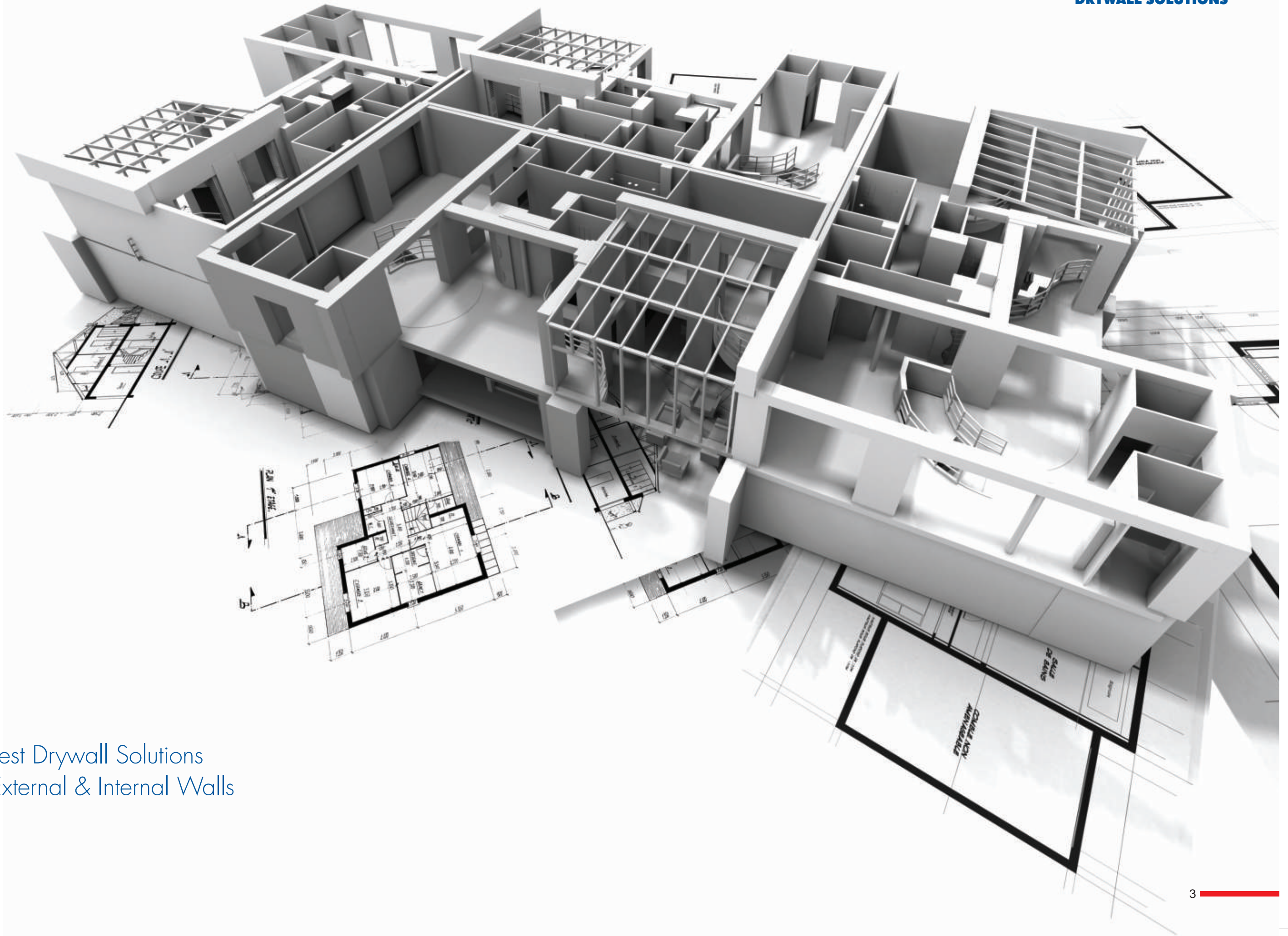
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Everest Drywall Solutions
for External & Internal Walls

EVEREST DRYWALL SYSTEMS

FAST

- LIGHT WEIGHT
- HASSLE FREE INSTALLATION
- FLEXIBILITY OF DESIGN
- ACOUSTIC INSULATION
- THERMAL INSULATION



EVEREST DRYWALL SYSTEMS

DURABLE

- FIRE RESISTANT
- EXCELLENT GREEN MATERIAL
- SEVERE DUTY IMPACT RESISTANT



Everest Wall Framing Systems

Everest Fibre Cement Boards

WHAT IS A DRYWALL?

Wall that is erected with boards using a framing system is called Drywall. It is best suited to the modern trend of fast-track construction schedules as it's lighter, easy to handle, and eliminates 'drying time' associated with brick and mortar construction. Ideal for non-load bearing walls, Drywall controls cost while maintaining the highest quality standards and aids better co-ordination between all construction activities.

Advantages of a Drywall

In Construction:

- Just 25% of the weight of a conventional wall hence easy to install
- Non-messy dry construction. Material and waste handling becomes easy and economical
- Allows parallel construction activities at site
- Saves water. Eliminates curing time and cost
- Does not require beam system for support so allows flexibility in future layout changes

In Cost Savings:

- 33% faster construction than conventional wall. Savings in project costs due to timely completion
- Structural cost savings

In Energy Savings:

- Better building envelope performance
- Energy efficient interiors

Other Advantages:

- Ideal for seismic conditions
- Enhanced performance parameters like sound insulation, thermal insulation and fire rating

Though up to 30% costlier than Conventional Wall, Drywall recovers incremental cost in a short period of time through operational benefits.





DRYWALL SYSTEMS FROM EVEREST

At Everest, we understand that when you make a building you make it for life. This is why we bring you walls that last. With Everest Drywall Systems, your construction is strong, sturdy and safe from moisture and termites. Further, it takes care of your comfort by providing protection from unwanted noise, fire, heat and impact resistance.

For details please see overleaf.

Often, Drywalls are compared with brick or block walls in terms of compressive strength, which is unfair. This is because Drywalls are meant only for non-load bearing filler walls, hence comparison by compressive strength is irrelevant. What is more important is Impact Resistance.

Everest Drywall Systems fall under Severe Duty of Impact Resistance. This unique performance parameter makes them an ideal choice for partitions in high traffic areas or partition systems subjected to surface abuse in external, internal and wet areas. Can service all building segments like **Industrial, Healthcare, Hospitality, Commercial, Educational or Government Institutions and Corporate.**

Besides, only Everest Drywall Systems offer you more performance parameter values than any other. These are:

- Sound Insulation
- Fire Protection
- Thermal Insulation

No wonder Everest Drywall Systems are popularly known as **Smart Performance Walls.**

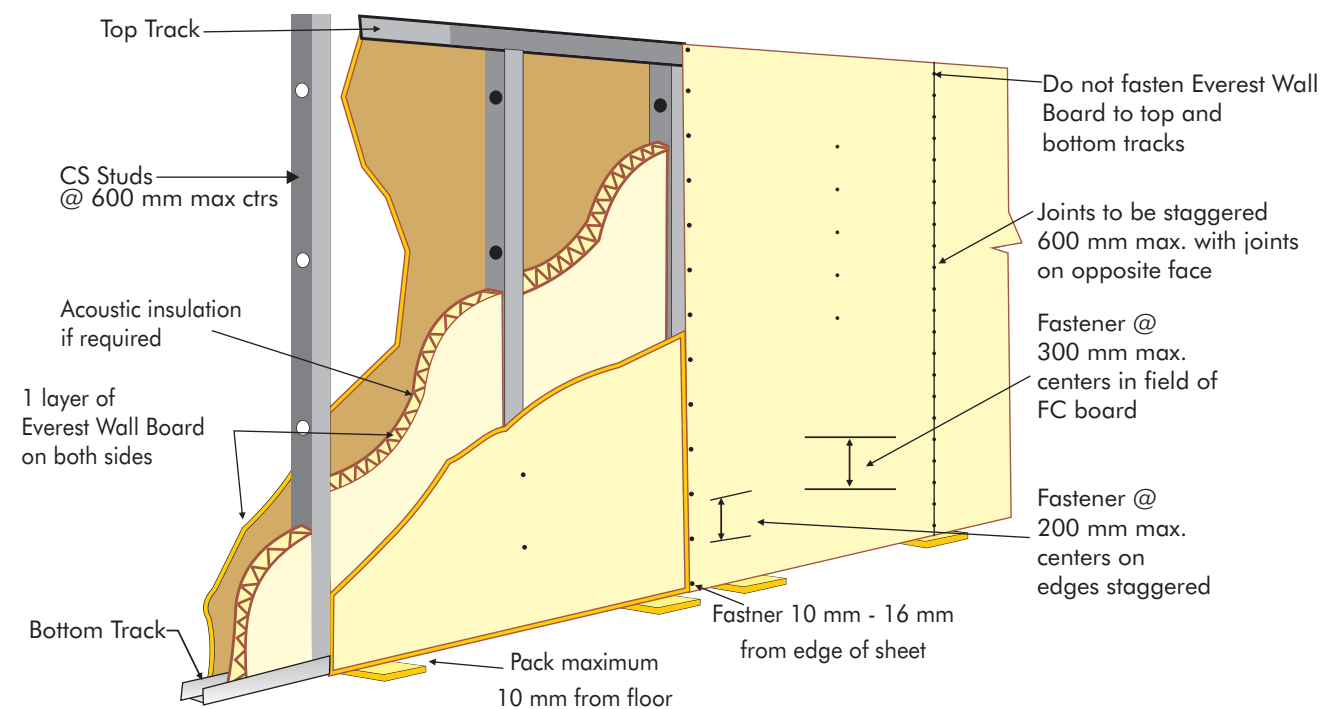
Hollow Core and Solid Core Drywall Systems from Everest

Everest offers both types of Drywall Systems for internal, external and wet area applications:

- Hollow Core Drywall Systems
- Solid Core Drywall Systems

The light weight **Everest Hollow Core Drywall Systems** comprise Everest Fibre Cement Boards and Everest Wall Framing System. These are available with or without insulating material between the cavity, depending upon the requirement. Everest Hollow Core Drywall Systems also include a combination of Everest Fibre Cement Boards and Gypsum Plaster Boards, for enhanced performance value than standalone Gypsum Plaster Board Drywall Systems.

Everest Solid Core Drywall Systems are offered through its solid wall panels, with typical tongue and groove arrangements.



Walls Hollow Core Partitions

Everest provides Drywall Systems for the following usages:

USAGE	TYPE	SPECIFICATION
Internal Partitions	a. Hollow Partitions	<ul style="list-style-type: none"> • Everest Fibre Cement Boards in combination with Everest Wall Framing Systems • Hybrid of Everest Fibre Cement Boards & Gypsum Plaster Boards with Everest Wall Framing Systems
	b. Solid Wall Partitions	<ul style="list-style-type: none"> • 50/75 mm Everest Solid Wall Panels
Partitions in Wet Areas	a. Hollow Partitions	<ul style="list-style-type: none"> • Everest Fibre Cement Boards in combination with Everest Wall Framing Systems
	b. Solid Wall Partitions	<ul style="list-style-type: none"> • 50/75 mm Everest Solid Wall Panels
External Walls	a. Hollow Walls	<ul style="list-style-type: none"> • Everest Fibre Cement Boards in combination with Everest Smart Steel Framing Systems • Hybrid of Everest Fibre Cement Boards & Gypsum Plaster Boards with Everest Smart Steel Framing Systems
	b. Solid Walls	<ul style="list-style-type: none"> • 75 mm Everest Solid Wall Panels



Unique Tongue & Groove Joint

Solid Core Partitions



ATTRIBUTES OF EVEREST DRYWALL SYSTEMS

Everest Drywall Systems have many unique attributes that contribute to their enhanced performance parameters. These value-added features make Everest Drywall Systems better than any other Drywall System available in the market today.

For details please see overleaf.

Attributes of Everest Drywall Systems

As compared to other Drywall Systems, Everest Drywall Systems have added attributes like:

Severe duty of Impact resistance

This attribute makes it the preferred choice in almost all types of building segments like educational and government institutions, commercial, hospitality, healthcare, industrial and corporate sector.

Security for Internal Walls

Everest Fibre Cement Boards and Solid Wall Panels cannot be easily cut with a sharp object (unlike Gypsum Plaster and Calcium Silicate Boards). These need a mechanized rotary cutter for cutting.

More Unplanned Loading

For Drywalls, all loadings are pre-planned with arrangements of additional metal reinforcement. Despite such arrangements, need for unplanned loading may arise after the occupants move in to the finished building. Everest Drywall Systems, with cavity fixtures, can accommodate about 75% more load as compared to other Drywall materials.

Sleeker Partition with better performance parameters

The high density of Everest Fibre Cement Boards and Solid Wall Panels for Drywall Partitions ensure enhanced sound insulation and fire rating as compared to other available Drywall Systems.

Enhanced Thermal Insulation

Everest Fibre Cement Boards and Solid Wall Panels have comparatively lower K-values (Coefficient of Thermal Conductivity), hence provide better thermal insulation for improving building envelope performance (external walls) and energy efficient interior walls.

Complete Wall Solution for all usage areas

Everest Drywall Systems are an ideal solution for external, internal and wet area applications.

Design Excellence

Everest customizes its Drywall Systems as per customer's need and desired performance parameters. Its in-house software takes care of intricate designs associated with external wall systems such as wind, seismic and defined structural load.

Note:

Everest Hybrid Hollow Core Drywall Systems (Hybrid of Everest Fibre Cement Boards and Gypsum Plaster Boards, with Everest Wall Framing Systems) have higher performance and usage values, like higher unplanned loading, security to the internal walls, economical partitions for better sound insulation and fire rating wall and better impact resistance than standalone Gypsum Plaster Board Drywall Systems.



Everest Drywall vis-a-vis Conventional Wall

PROPERTY	CONVENTIONAL BRICK/BLOCK WALL	EVEREST DRYWALL	REMARKS
Sound Insulation	42 dB for 4" Brick Wall	38 to 65 dB	Sleeker and lighter drywalls with enhanced sound insulation. (Systems can be designed for higher acoustical needs)
Fire Rating	30 to 60 min	30 to 120 min	Drywalls can be designed for higher fire ratings
Thermal Insulation	K - Value of Clay Brick is 0.69 W/mk (U - Value of 125 mm Brick Wall is 5.52 W/m ² k)	K - Value of Standard Wall Board is 0.145 W/mk K - Value of Heavy Duty Wall Boards is 0.16 W/mk.K - Value of Solid Wall Panel is 0.135 W/mk (U - Value of Drywall Systems vary from 3.44 to 0.36 W/mk, in combination with other insulating materials)	Drywalls offer better thermal insulation
Compressive Strength	30 to 40 Mpa	---	Compressive strength of Drywalls is irrelevant as they are meant for Non Load Bearing Filler Walls
Impact Resistance	Brick (125 mm thick)	ALC Panels (100 mm thick)	Everest Drywalls Systems
a. Stiffness	Severe Duty	Severe Duty	Severe Duty
b. Small Hard Body Impact	Severe Duty	Severe Duty	Severe Duty
c. Large Soft Body Impact	Severe Duty	Severe Duty	Severe Duty
d. Door Slam	Severe Duty	Severe Duty	Severe Duty
Crowd Pressure	Brick (125 mm thick) 3 kN/m	ALC Panels (100 mm thick) 3 kN/m	Everest Drywall Systems 3 kN/m
Light Weight Anchorage	Brick (125 mm thick) Pass	ALC Panels (100 mm thick) Pass	Everest Drywall Systems Pass
Weight	Above 150 Kg/Cu-m	22 Kg - 55 Kg/Cu-m	Drywalls are 1/4 th the weight of Conventional Walls

Note: Similar to Brick or Block Walls, all Everest Drywall Systems, fall under severe duty of impact resistance.



COMPONENTS OF EVEREST DRYWALL SYSTEMS

Everest Drywall Systems comprise two important components - Everest Wall Boards and Everest Wall Framing Systems.

The boards manufactured are:

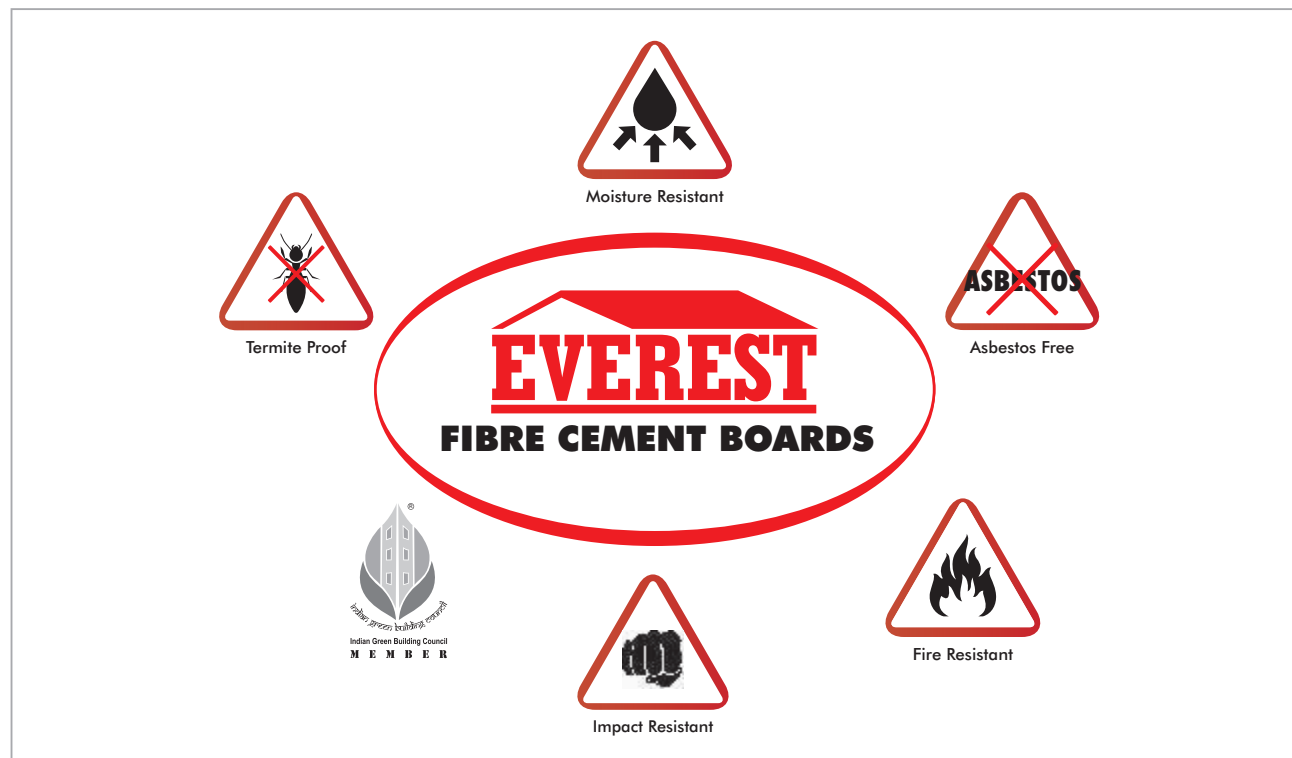
- Everest Fibre Cement Boards
- Everest Heavy Duty Wall Boards
- Everest Designer Wall Boards



Everest Fibre Cement Boards

Everest Fibre Cement Boards consist of Portland Cement, Fly Ash, Wood Cellulose Fibre, Silica and other reactants and additives. These are manufactured using state-of-the-art Hatschek (Lamination) Process and High Pressure Steam Curing (HPSC) in Autoclaves, making them strong and durable. The manufacturing process conforms to IS 14862 & ISO 8336 Part (E).

Attributes of Everest Fibre Cement Boards & Solid Wall Panels



Technical Properties of Standard, Designer & Heavy Duty Boards

PROPERTY	UNIT	STANDARD	VALUE	
			STD/DESIGNER	HEAVY DUTY
Standard Weight	kg/m ²	ISO 8336/IS 14862	8.95 for 6 mm	9.24 for 6 mm
Apparent Density (Dry)	kg/m ³	ISO 8336/IS 14862	>1150	>1500
Impact Strength	KJ/m ²	ASTM D 256	6.9 for 8 mm 7.7 for 10 mm	9.0 for 8 mm 12 for 9 mm
MMOR (at EMC)	MPA; N/m ²	ISO 8336/IS 14862	10.0	21.2
MMOR (in wet conditions)	MPA; N/m ²	ISO 8336/IS 14862	7.0	15.7
Acoustical Insulation	dB	B2750	26 for 6 mm	32 for 6 mm
Thermal Conductivity at 50°C	W/mk	ASTM C 518	0.145	0.162

- The high impact strength and Modulus of Rupture signifies the strength of the skin layer of the Hollow Core Drywall System
- The high Modulus of Rupture even in wet conditions signifies its strength, while used under wet area or external applications
- The high density and composition of the boards enhances their Sound Insulation, Thermal Insulation and Fire Protection properties. (Boards in combination with Everest Wall Framing Systems and insulating material provide higher performance parameter values)



Everest Solid Wall Panels for Solid Core Drywall Systems

Everest manufactures Solid Wall Panels for its Solid Core Drywall Partition offerings. These are manufactured in two thicknesses:

- 50 mm Everest Solid Wall Panels
- 75 mm Everest Solid Wall Panels

Everest Solid Wall Panels are a revolutionary Drywall System. 50/75 mm thick fibre reinforced aerated cement sandwich modules made out of light weight fibre reinforced aerated cement/concrete core composed of Portland cement, fly ash, binders etc. and 4 mm thick Fibre Cement Boards on either side of the core, having a tongue and groove joint on longitudinal side of the modules.



Technical Properties of Solid Wall Panels

PROPERTY	UNIT	STANDARD	VALUE
Size	mm	---	3000 x 600, 2700 x 600, 2400 x 600
Thickness	mm	---	50 & 75
Standard Weight	kg/m ²	---	42.8 for 50 mm & 58.2 for 75 mm
Edge Profile	---	---	Square, Beveled
Apparent Density (Dry)	kg/m ³	IS 2380 P.3:77	892
Tensile Strength (Perpendicular to the Surface)	N/mm ²	IS 2380 P.4:77	0.35
Modulus of Rupture (MOR)	Mpa	IS 2380 P.5:77	3.8
Screw Withdrawal Strength	kN	IS 2380 P.14:77	0.37
Thermal Conductivity	K.cal/h.	mdegC/W/mk	ASTM C 1770.12 / 0.135
Axial Compressive Strength	kN/m	IS 2380 P.8:77	420
Sound Transmission Class	dB	IS:9901 (Part 3) -1981	40
Fire Resistance Properties	Everest Solid Wall Panels are non-combustible and qualify for Early Fire Hazard Indices as per BS – 476 part 20 & 22		
Moisture Resistance Properties	Everest Solid Wall Panels are moisture resistant and are tested as per IS 2380		

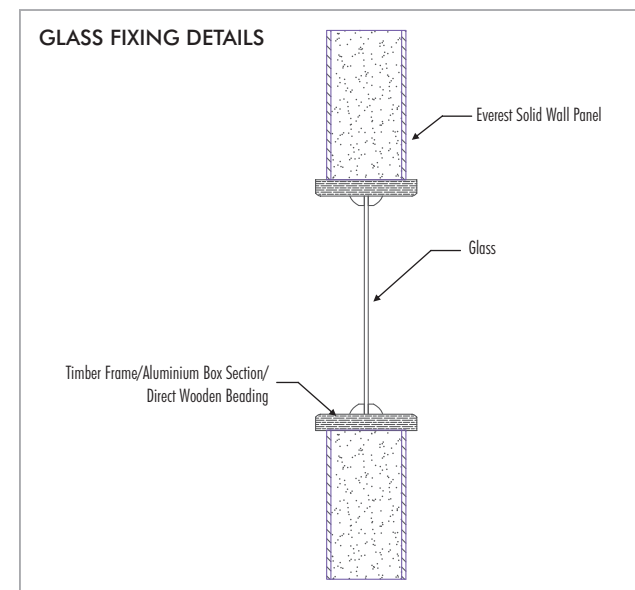
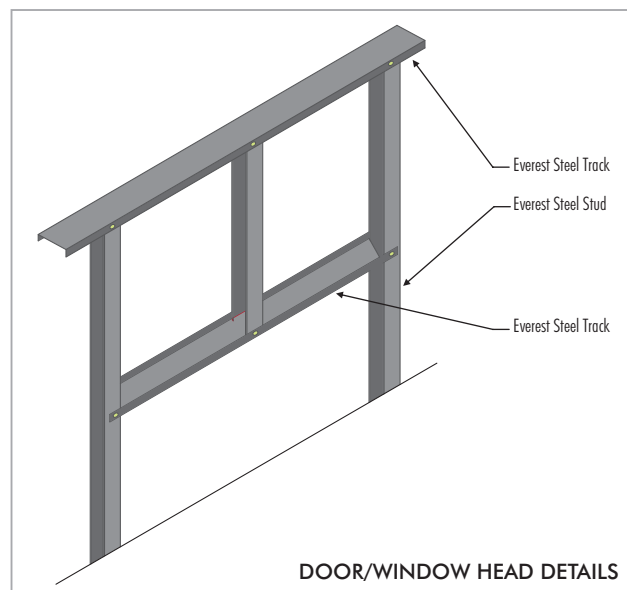
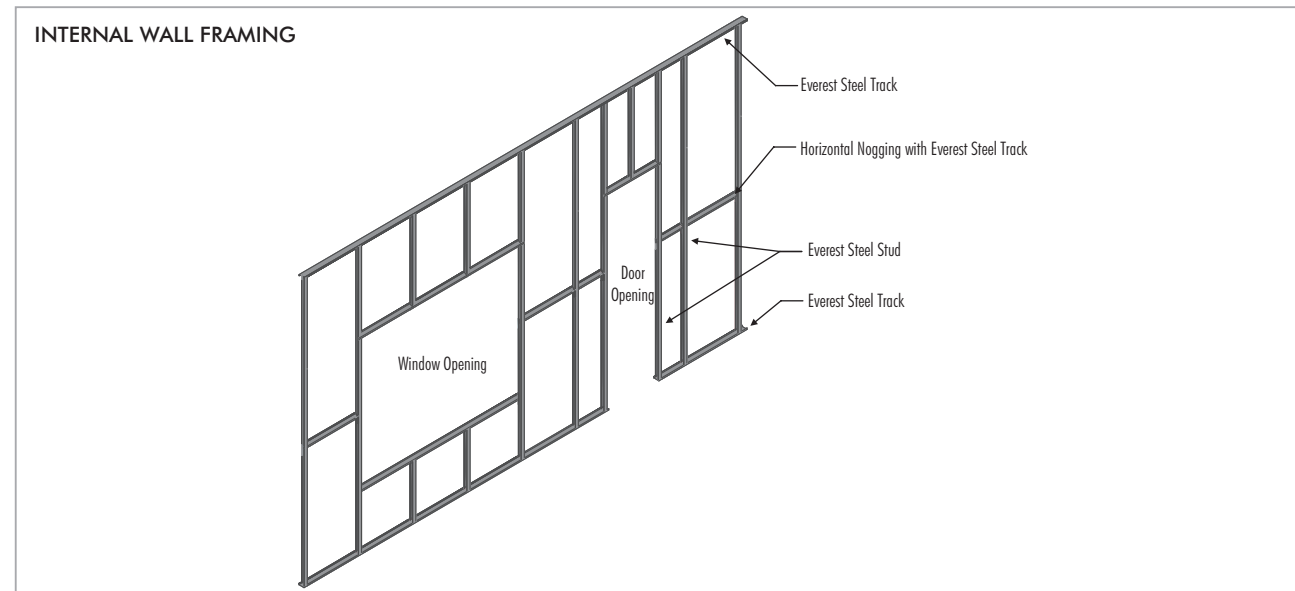
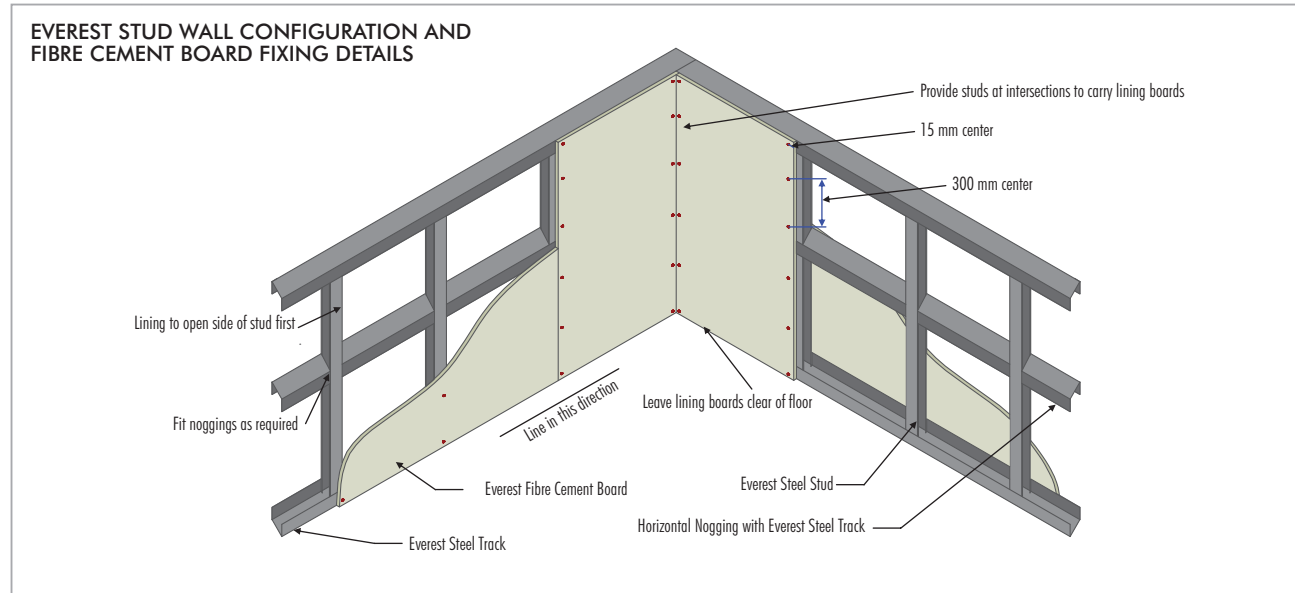
- Everest Solid Wall Panels are solid, yet light in weight as compared to other conventional brick/block walls
- With lower K-Value and higher mass as compared to Everest Hollow Drywall Partitions System, Everest Solid Wall Panels provide relatively higher thermal insulation



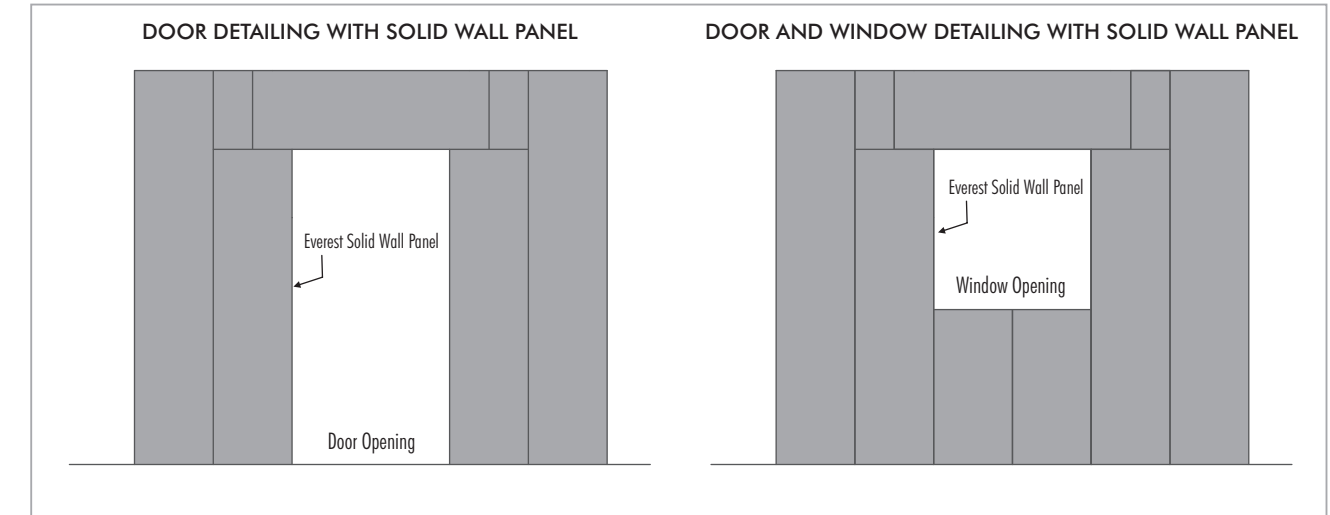


CONSTRUCTION CONFIGURATION AND FINER DETAILING

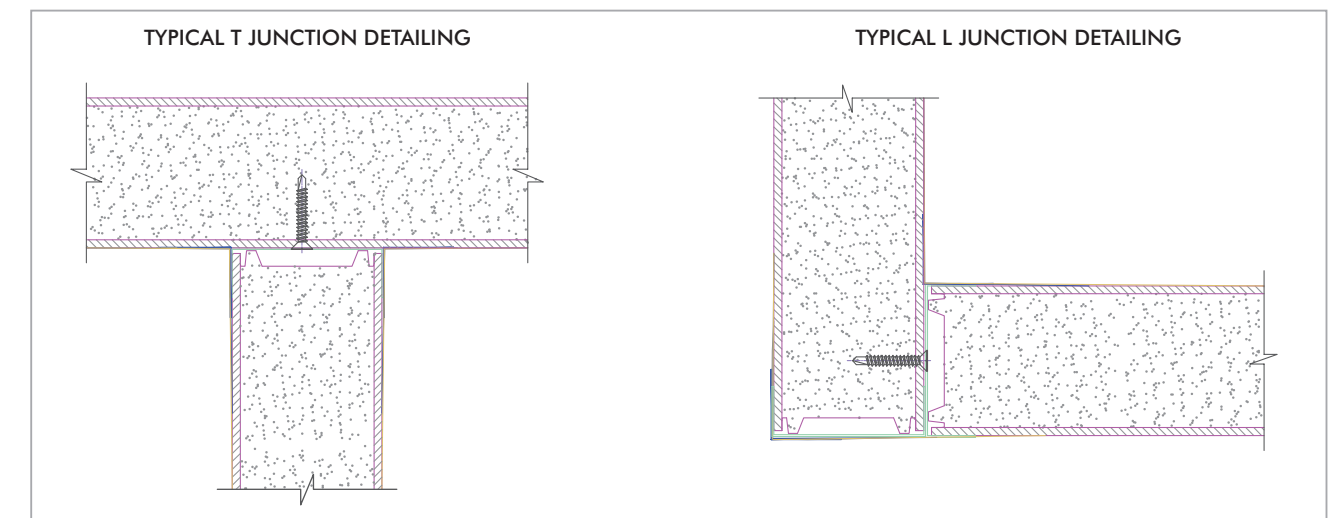
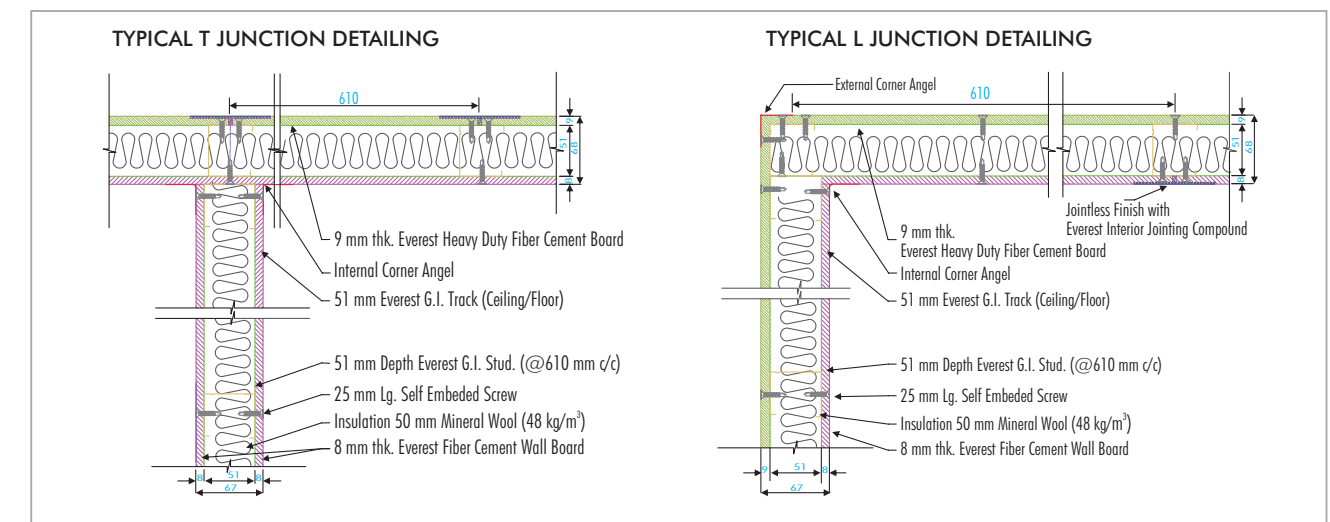
Sectional Diagram for Framing, Boarding, Door and Window/ Glazing Openings - Internal/External (Hollow Core) Drywalls



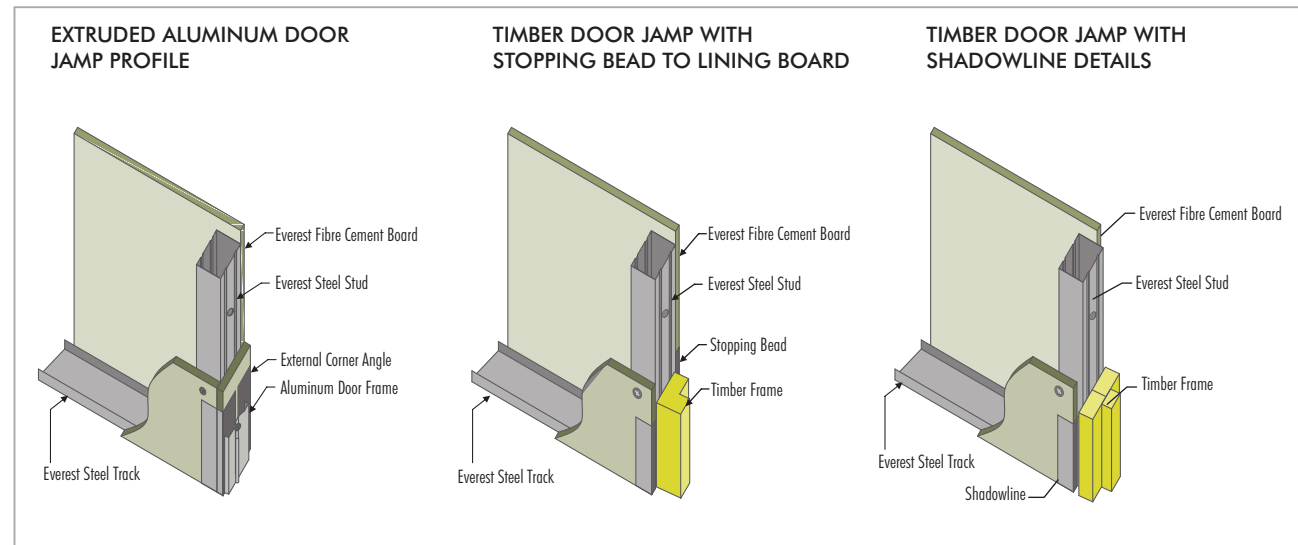
Sectional Diagram for Door and Window/ Glazing Openings - Internal/External (Solid Core) Drywalls



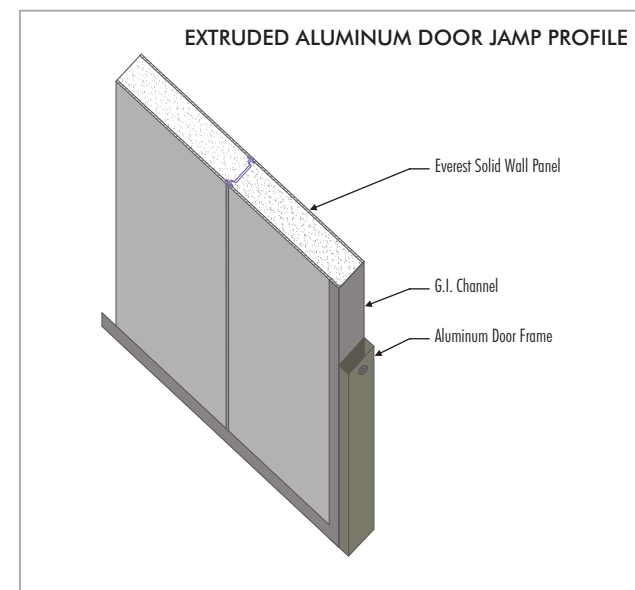
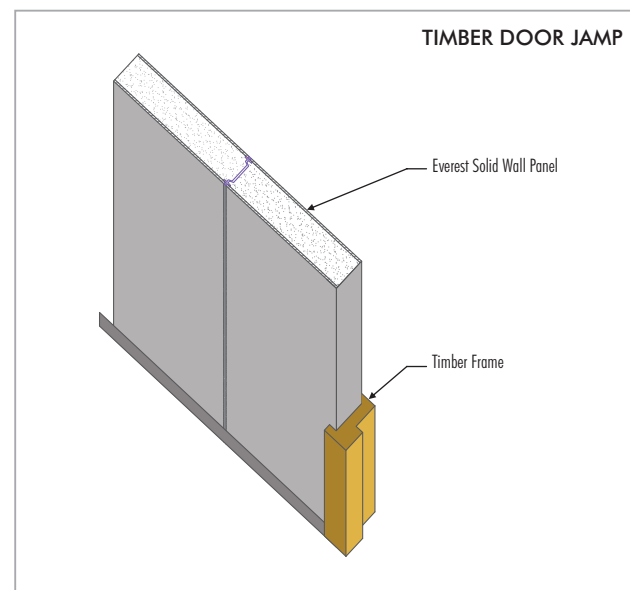
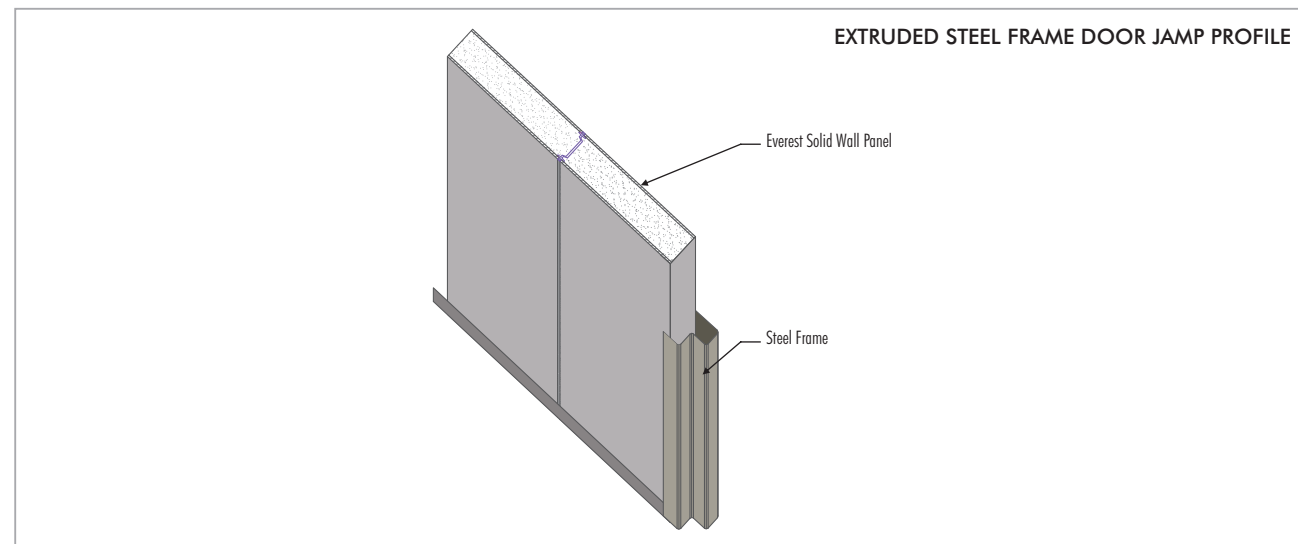
'T' & 'L' Junction Details - Internal & External (Hollow & Solid Core) Drywalls



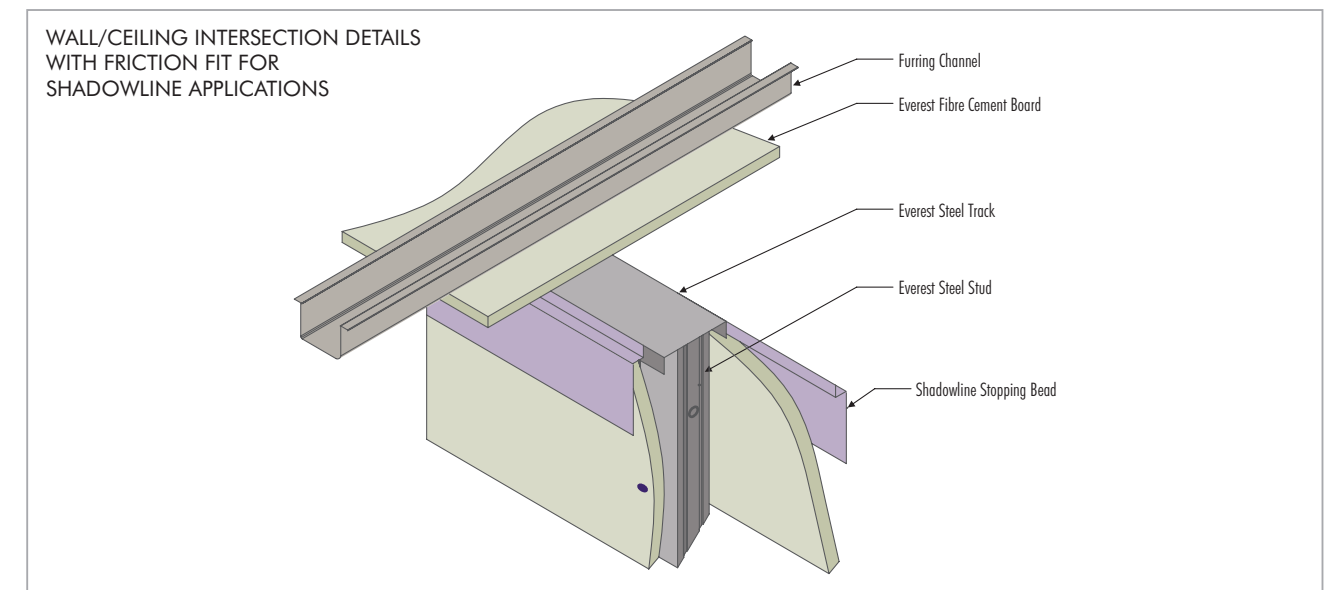
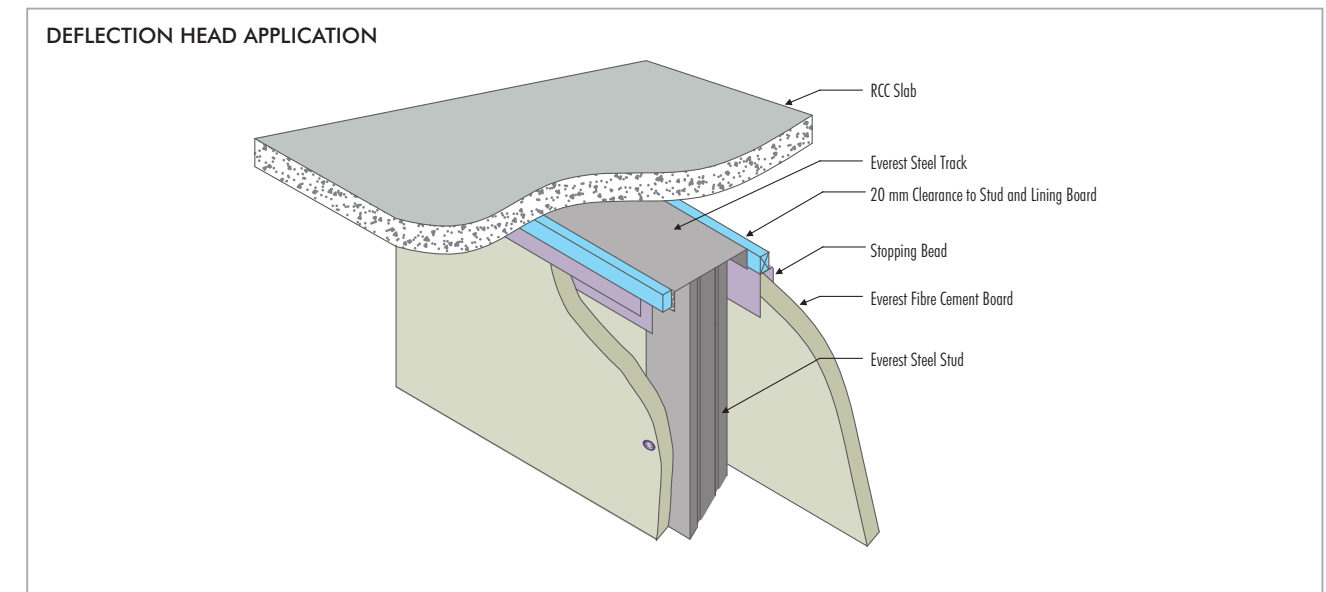
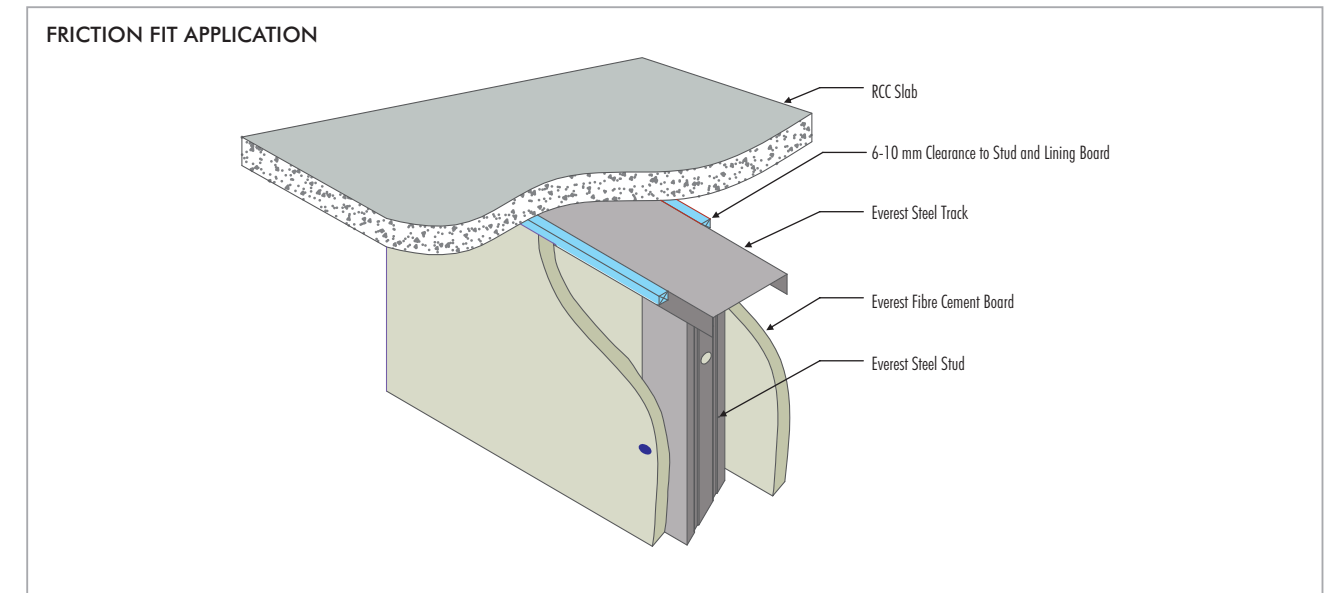
Door Jamb Details - Internal/External (Hollow Core) Drywalls



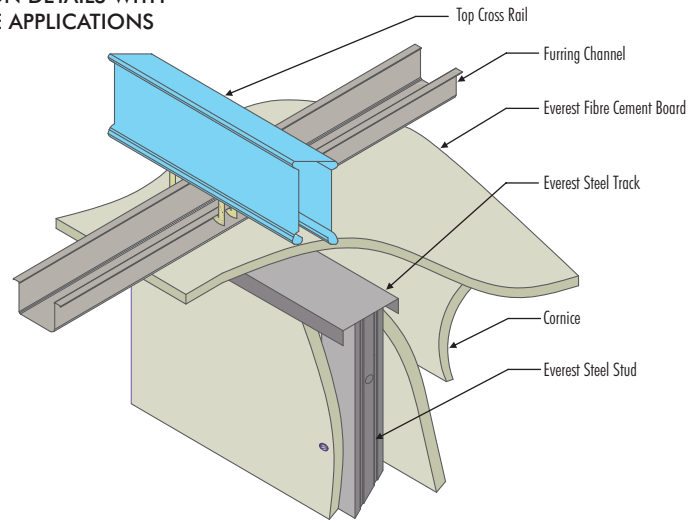
Door Jamb Details - Internal/External (Solid Core) Drywalls



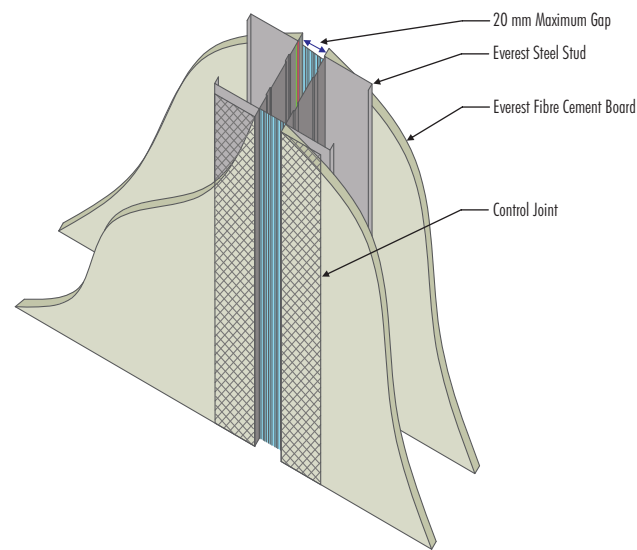
Finer Detailing and Construction Configurations



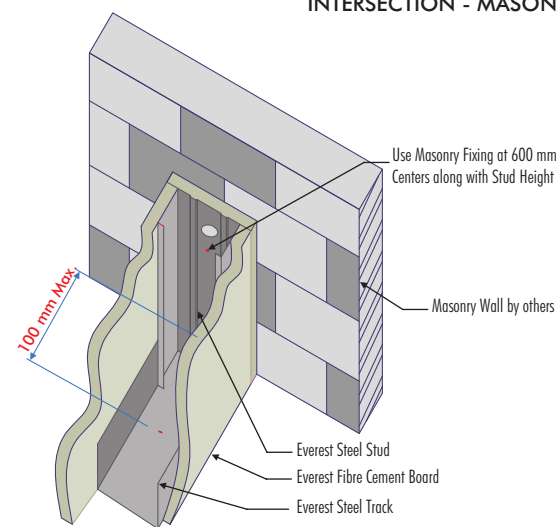
WALL/CEILING INTERSECTION DETAILS WITH FRICTION FIT FOR CORNICE APPLICATIONS



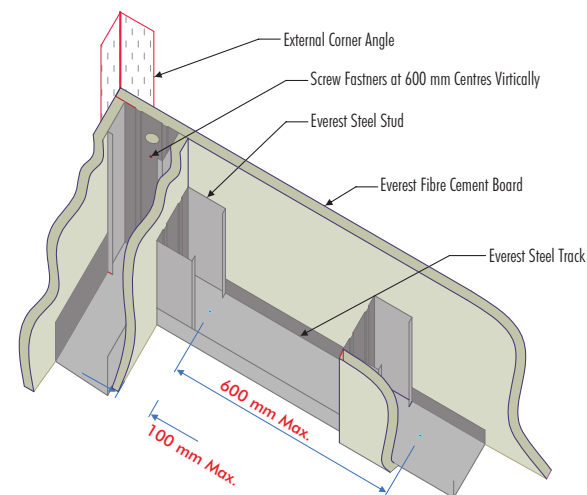
STUD WALL CONSTRUCTION WITH CONTROL JOINTS



INTERSECTION - MASONRY

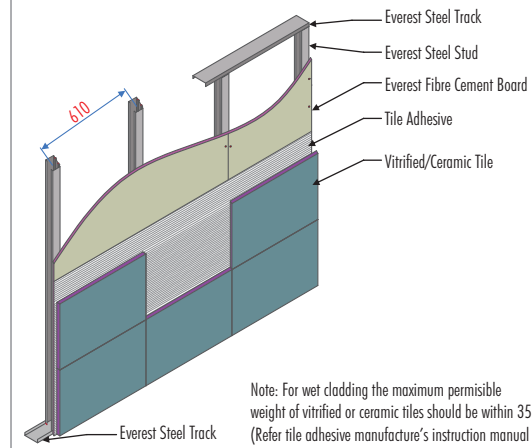


DETAILING AT CORNER



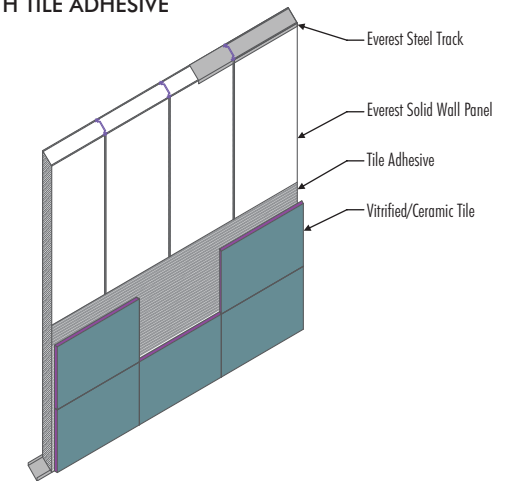
Finishes (Wet & Dry Cladding) 1. Wet Cladding

WET CLADDING OF VITRIFIED/CERAMIC TILES ON EVEREST DRYWALL SYSTEMS, WITH TILE ADHESIVE



Note: For wet cladding the maximum permissible weight of vitrified or ceramic tiles should be within 35 kg/sqm. (Refer tile adhesive manufacture's instruction manual for fixing details.)

WET CLADDING OF VITRIFIED/CERAMIC TILES ON EVEREST SOLID WALL PANELS, WITH TILE ADHESIVE

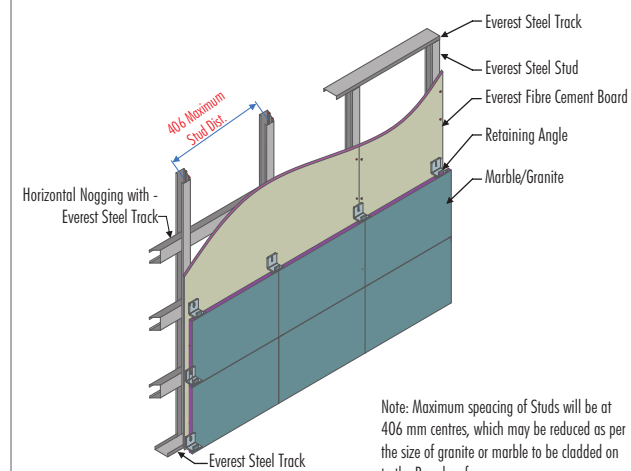


CERAMIC AND VITRIFIED TILES ARE WET CLAPPED ON TO THE FIBRE CEMENT BOARD USING TILE ADHESIVE



2. Mechanical Cladding

MECHANICAL CLADDING OF MARBLE/GRANITE ON EVEREST DRYWALL SYSTEMS



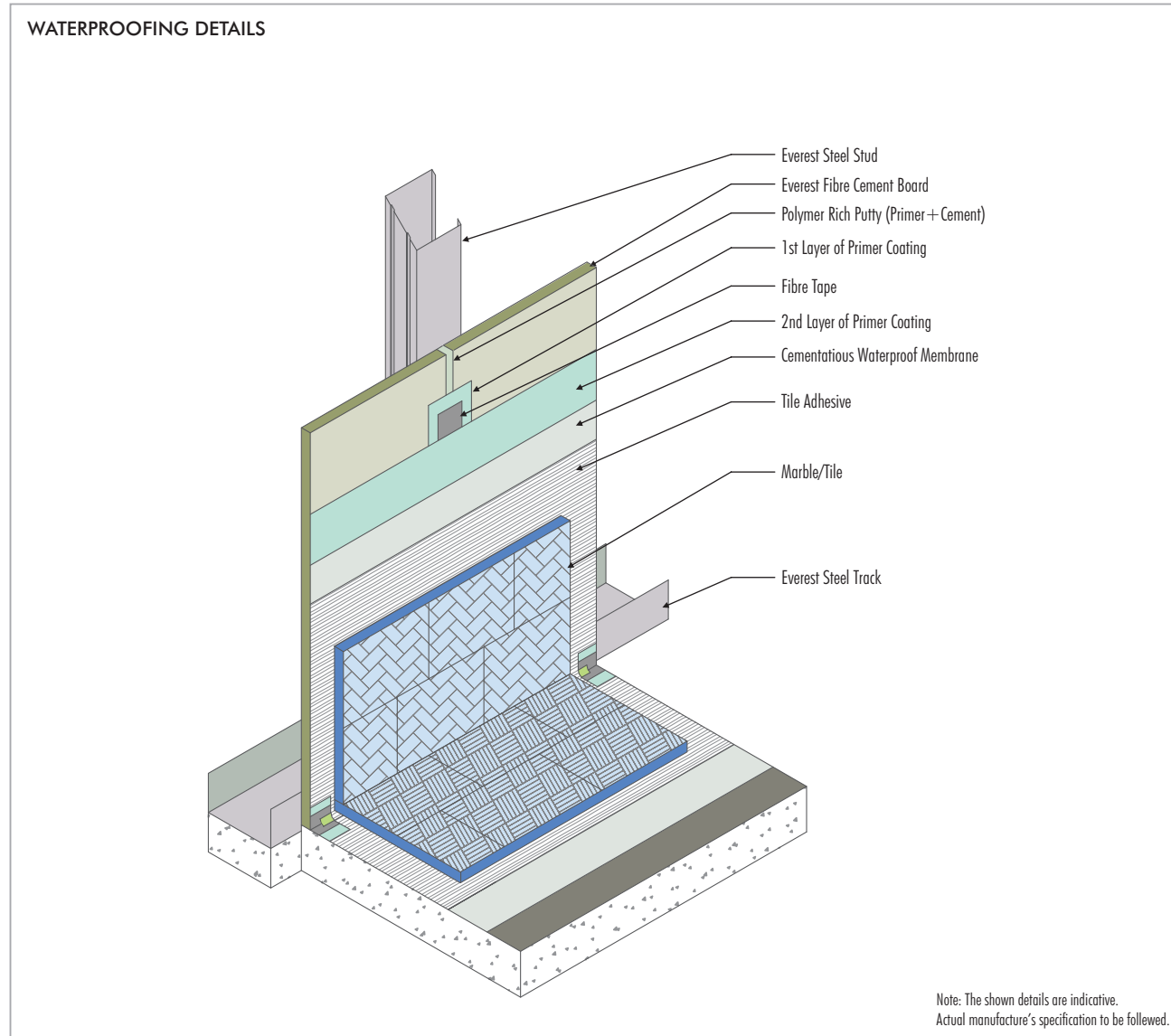
Note: Maximum spacing of Studs will be at 406 mm centres, which may be reduced as per the size of granite or marble to be cladded on to the Board surface

TILING SOLUTION (WET & DRY AREAS)

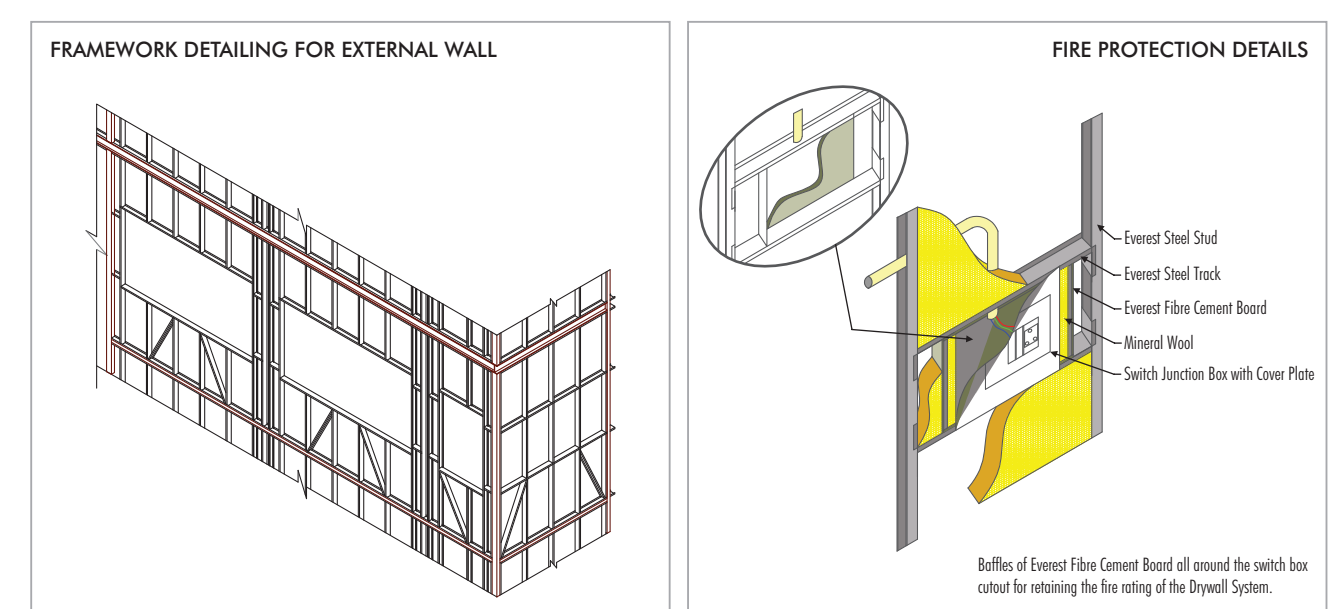
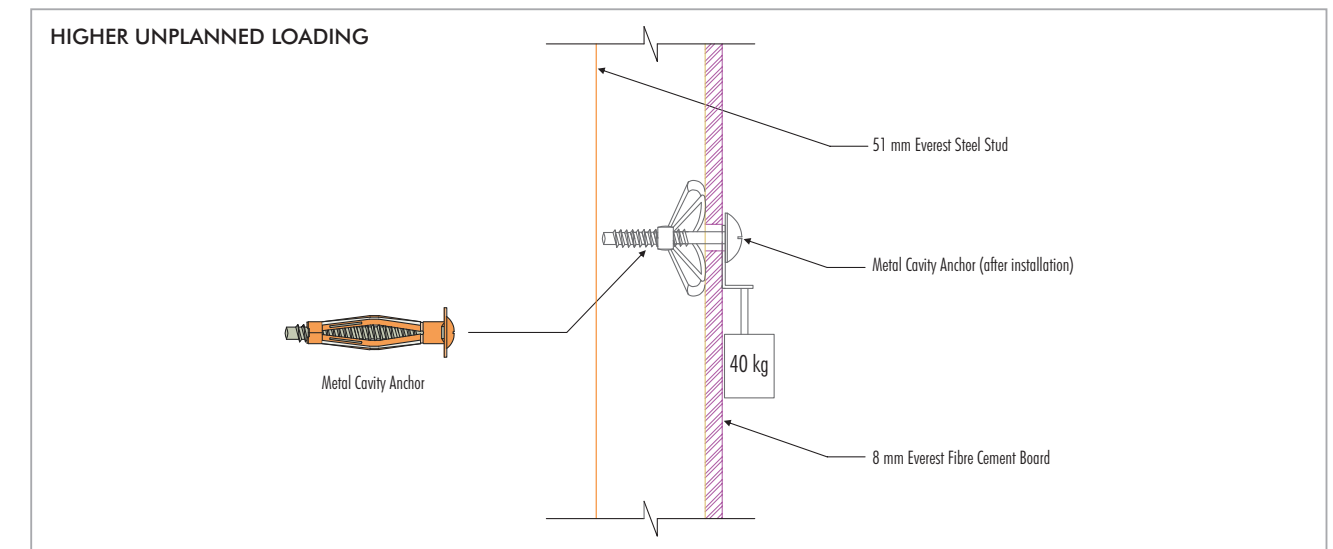
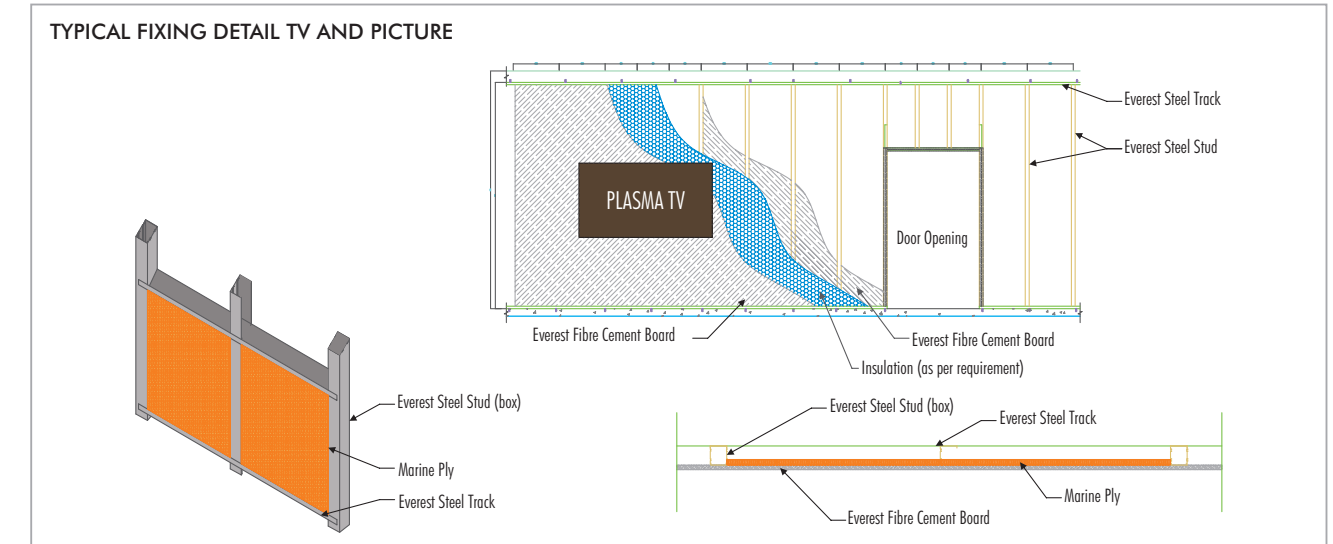


- Dry or Mechanical Cladding of Marble & Granite onto the Fibre Cement Board Surface
- Marble and Granite with weight over 30 Kg/m² are to be Mechanically Cladded

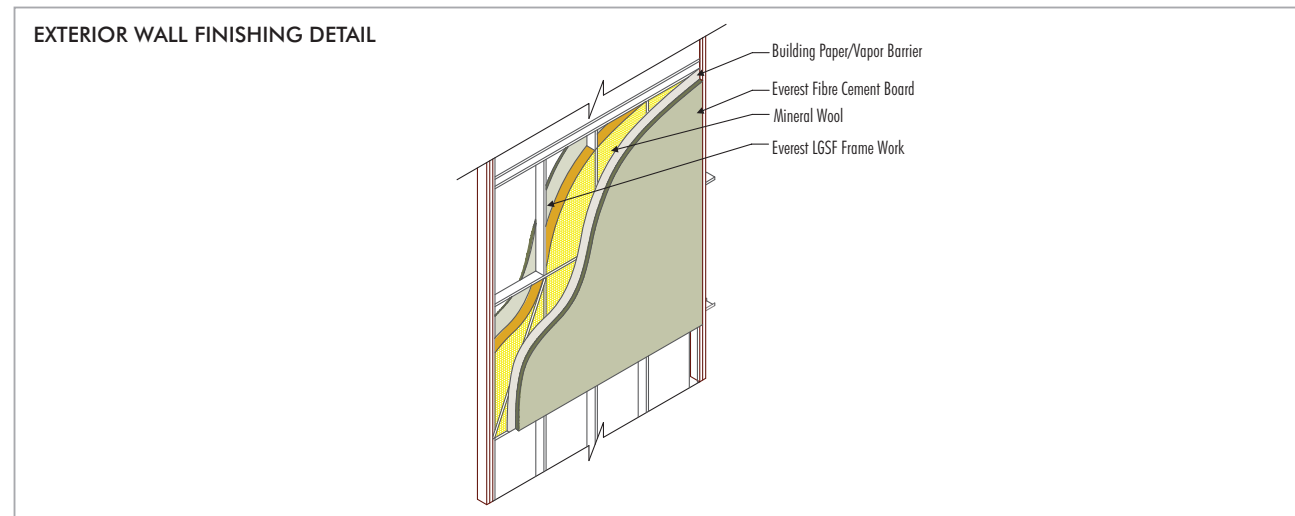
Wet Area Detailing



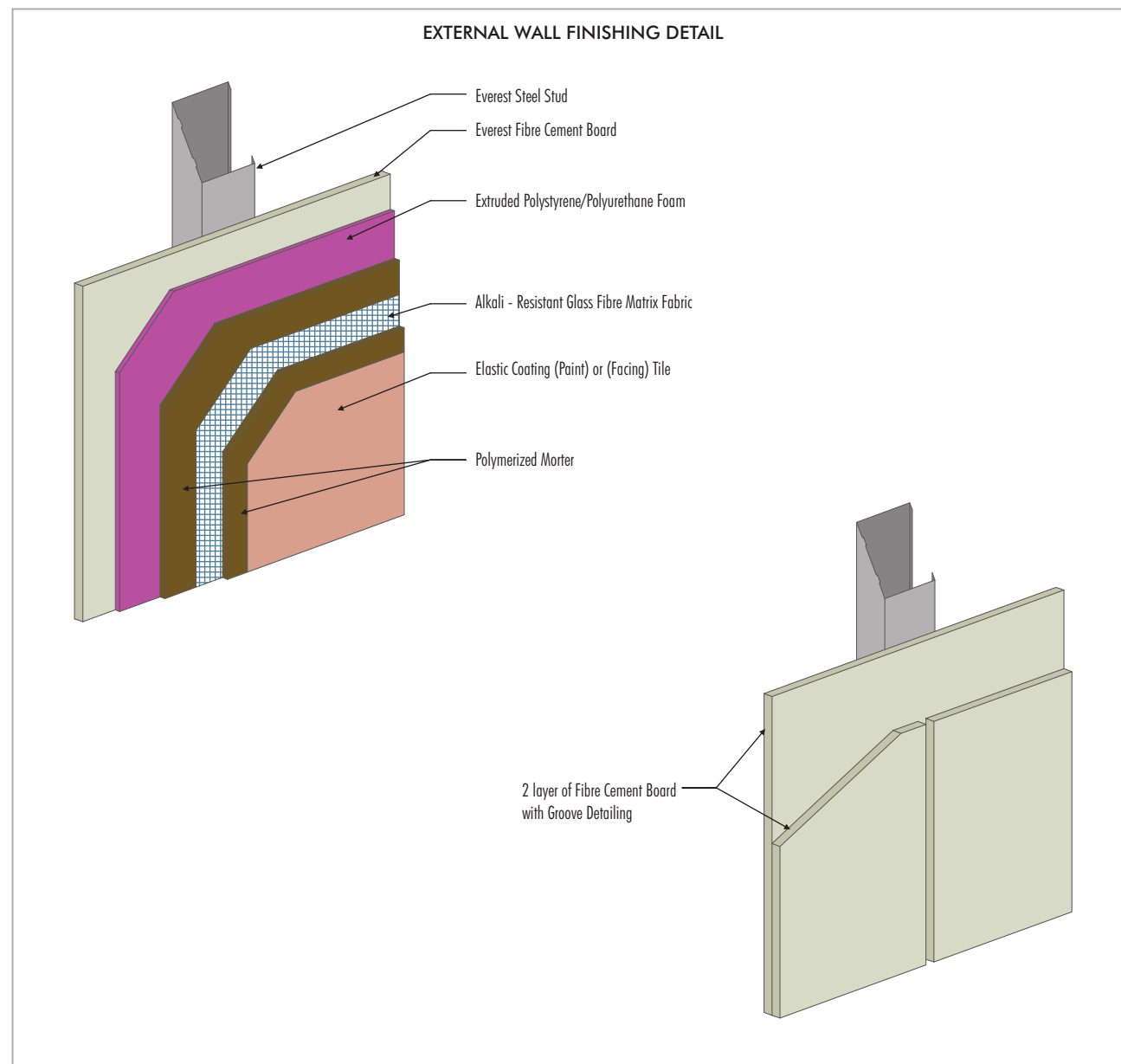
Planned and Unplanned Loading - Internal (Hollow Core) Drywalls



Construction Configuration - External (Hollow Core) Drywall



Surface Finishing Details - External (Hollow Core) Drywall



STRONGEST DRYWALLS



Everest Wall Framing Systems

Everest Fibre Cement Boards

COMPONENTS OF EVEREST DRYWALL SYSTEMS - FRAMING SYSTEMS

Everest Wall Framing Systems provide a strong and stable backbone for Everest Drywalls. These are specially treated for corrosion resistance and comply with fire-rated, acoustic and load bearing requirements.

For details please see overleaf.

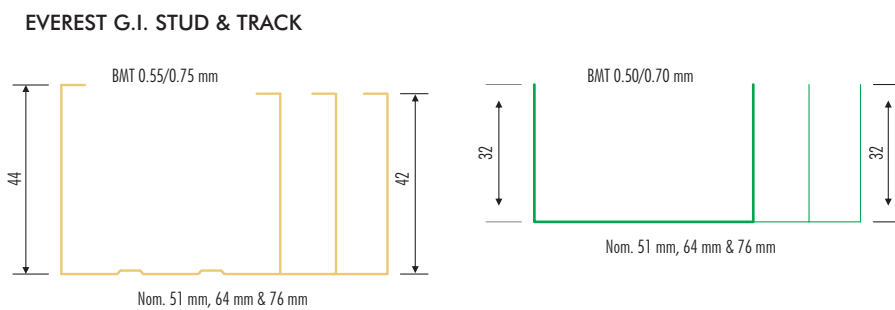
'Everest Steel' Wall Frame Profiles for Hollow Core Drywall Systems (Internal Walls)

The 'Everest Steel' Studs & Track sections provide designers with the scope to design Framing Systems that are durable and versatile. Construction of Sound & Fire Rated walls can be achieved using 'Everest Steel' profiles and accessories. The Framing Systems are specially designed for Everest Fibre Cement Boards, having wider flange as compared to other Framing Systems. The flanges of the stud are 42 mm and 44 mm.

'Everest Steel' sections are manufactured from superior G.I – 180, YS 345 Mpa, hot dipped galvanized coated steel strips as per IS-277/2001 with a minimum coating of 180 GSM.

'Everest Steel' Studs & Track are available in web width of 51, 64 and 76 mm. Service holes start at 150 mm from the end of the Stud and are spaced at 600 mm centers up to a maximum of five holes in any one length, giving a straight line for services. Studs are designed to be boxed for extra strength at door and window openings and are capable of carrying extra loads such as shelving etc.

Note: We can also provide the above wall framing profiles in Galvalume of web width of 51, 64, 76, 92, 100, 150 mm. The flanges of the Studs in Galvalume will be of 34 & 36 mm.



Comparison of Everest Wall Framing Systems with Others

Properties	Everest Wall Framing Systems	Other Branded Wall Framing Systems	Remarks
Galvanizing	180 GSM	120 GSM	Higher Galvanizing in 'Everest Steel' provides more resistance to corrosion
Yield Strength	345 MPA	240 MPA	Higher Yield Strength of 'Everest Steel' imparts more strength and stiffness to the partition system
Flange Width	42 and 44 mm	34 and 36 mm	Wider flange of 'Everest Steel'
Service Slots	Round Bell Mouth	Square with sharp edges	Service slots in 'Everest Steel' protects services from damage

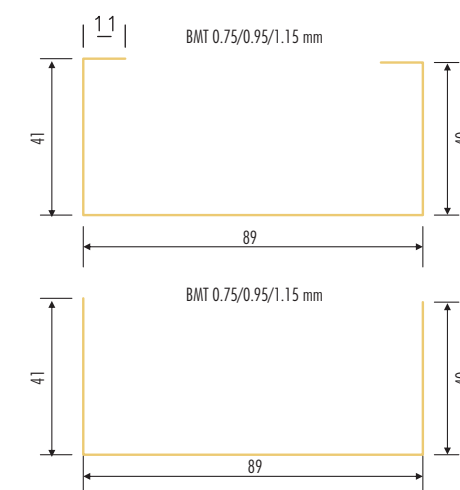
Everest Smart Steel Wall Frame Profiles for Hollow Core External Drywall Systems

Everest Wall Framing Systems consist of Everest Smart Steel (Light Gauge Steel Frame) sections. These are rolled out of G.I (275 gsm)/Galvalume (AZ 150), with YS-550 MPA. These light weight sections are designed and analyzed through our in-house software as per parameters conforming to ASNZS – 4600 – 2005, for all forces/ Loads (Wind Loads, Seismic Load and any defined Structural Load) as applicable for external walls. Everest Wall Framing Systems are designed using a modular section "C"- profile (Web width of 89 mm, having flanges of 39 mm and 41 mm and lips of 11 mm).

Special Features

- CNC Controlled Manufacturing Process
- Single Feed Multi Operation (Service Holes, Swaging, Lip Cutting, Dimple and Punch & Chamfering)

EVEREST SMART STEEL STUD & TRACK



Features of Smart Steel Wall Frames



SWAGE

A section that fits into another is swaged. This gives a leveled outer surface.



NOTCH

A section through which another section passes is notched (web is knocked-out) in that portion.



PUNCH & DIMPLE

Wherever a screw comes, the section is punched and dimpled. This helps in easy screwing and getting leveled surface after screwing.





UNDERSTANDING PERFORMANCE PARAMETERS

Everest Fibre Cement Boards perform exceptionally well in the face of the following performance parameters for a building material:
(i) Sound Insulation (ii) Thermal Insulation (iii) Fire Resistance (iv) Impact Strength

For details please see overleaf.

FUNDAMENTAL OF ACOUSTICS

Acoustics is usually very broadly defined as 'the science of sound.'

Room Acoustics

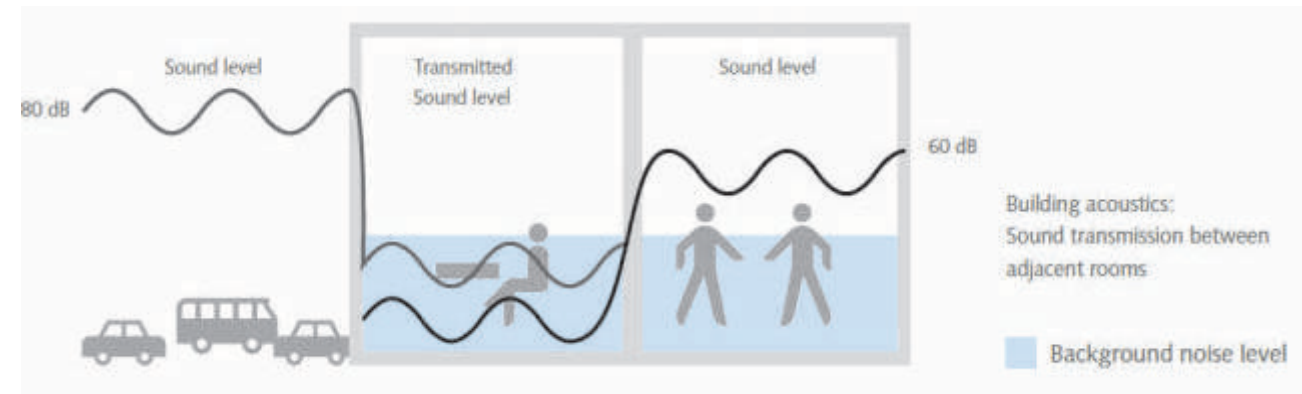
The shaping and equipping of an enclosed space to obtain the best possible conditions for faithful hearing of wanted sound and the direction and reduction of unwanted sound. Room Acoustics deal primarily with the control of sound which originates within a single enclosure, rather than its transmission between rooms.

Room Acoustics Versus Building Acoustics

In building acoustics, the question always is:

What portion of the sound reaches the other side of the component in question?

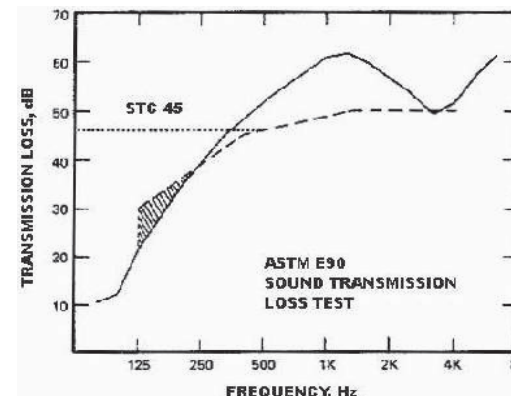
The key property is the sound insulation of the component. Essentially, it is about the ability of components – walls, ceilings, doors, windows, etc. – to minimise the sound transmission between two rooms. A high degree of sound insulation is usually achieved using solid, heavy components which hinder the propagation of sound across center band frequencies.



Sound Insulation Room Acoustics

Sound Transmission Class

Sound Transmission Class (or STC) is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. It is the measure of the overall transmission loss

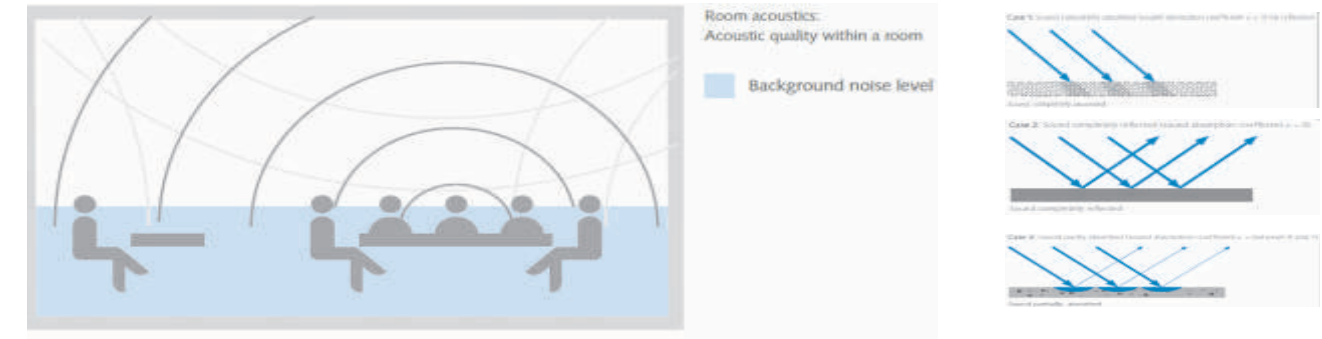


Room Acoustics Versus Building Acoustics

The question in room acoustics, on the other hand, is:

What surfaces help to create optimum listening conditions in a room?

The key property in this case is the sound absorption provided by the materials used in the room. Sound absorption describes the ability of materials to absorb sound or to convert the incident sound energy into other forms of energy. Sound absorption is achieved by means of sound absorbers.



Noise Reduction Coefficient

The noise reduction coefficient (commonly abbreviated NRC) is a scalar representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.

Sound Insulation with Everest Fibre Cement Boards

Walls, ceilings, doors, windows made from Everest Fibre Cement Boards provide excellent sound insulation ranging from 38 dB to 70 dB.

THERMAL INSULATION

Thermal conductivity, k , is the property of a material's ability to conduct heat. Heat transfer across materials of high thermal conductivity occurs at a faster rate than across materials of low thermal conductivity. Materials of high thermal conductivity are widely used in heat sink applications and materials of low thermal conductivity are used as thermal insulators. In the International System of Units (SI), thermal conductivity is measured in watts per meter kelvin ($W/(m \cdot K)$)

Thermal Resistance (R-Value)

Thermal resistance or R value of a material is governed by the thickness and thermal conductivity of that material. It is important to note that the thermal resistance value will increase with the thickness of the material (provided thermal conductivity remains constant). Thermal resistance is expressed in m^2K/W .

$$R = t/k$$

Where:

R = thermal resistance

t = material thickness (in meter)

k = thermal conductivity

Thermal Transmittance (U-Value)

Thermal transmittance or U value of a construction is defined as the quantity of heat that flows through a unit area of a building section under steady-state conditions in unit time per unit temperature difference of the air on either side of the sections. It is expressed in W/m^2K .

$$U = 1/R_t$$

Where R_t is the total thermal resistance and is given by:

$$R_t = R_o + t_1 / k_1 + t_2 / k_2 + \dots + t_n / k_n + R_i$$

Where:

R_o = air film resistance of external surface (m^2K/W)

R_i = air film resistance of internal surface (m^2K/W)

k = thermal conductivity of basic material (W/mK)

t = thickness of basic material (m)

Example

K-Values:

12.5 mm Gypsum Board – 0.16 W/mK

9 mm HD Board – 0.163 W/mK

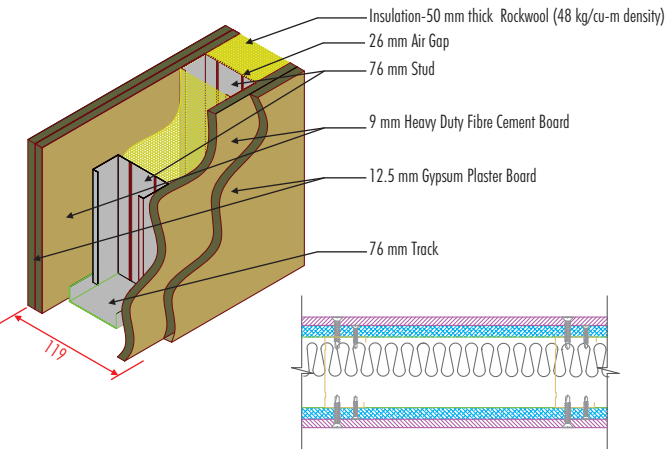
50 mm thick Rockwool - 0.033 W/mK

R-Values:

26mm Air Gap – 0.18 m²k/W

Outside air surface resistance – 0.06 m²k/w

Inside air surface resistance – 0.12 m²k/W



Example

Calculation of R-Value

$R(\text{Gypsum}) = t/k = 0.0125/0.16 = 0.0781 \text{ m}^2\text{k/W} \times 2 = 0.1562 \text{ m}^2\text{k/W}$

$R(\text{HD FCB}) = t/k = 0.009/0.163 = 0.0552 \text{ m}^2\text{k/W} \times 2 = 0.1104 \text{ m}^2\text{k/W}$

$R(\text{Rockwool}) = t/k = 0.05/0.033 = 1.515 \text{ m}^2\text{k/W}$

$R(\text{Total}) = R_o + R(\text{Gypsum}) + R(\text{HD FCB}) + R(\text{Rockwool}) + R(\text{Air Cavity}) + R_i$

$= 0.06 + 0.1562 + 0.1104 + 1.515 + 0.18 + 0.12$

$= 2.1416 \text{ m}^2\text{k/W}$

Example

Calculation of U-Value

$U\text{-Value} = 1/R(\text{Total})$

$= 1/2.1416$

$= 0.466 \text{ w/m}^2\text{k}$

Comparison with Competitors Products

Product	K-Value (W/mK)
Everest Fibre Cement Board	0.14
Everest Heavy Duty Fibre Cement Board	0.163
Everest Solid Wall Panel	0.139
Aerocon Panel	0.22
Gypsum Board	0.16
Calcium Silicate Board	0.15
Bison Board	0.25
Brick	0.69
Drywalls with Light Weight Concrete Blocks	0.16

Thermal Insulation with Everest Fibre Cement Boards

Everest Fibre Cement Boards offer excellent thermal insulation with performance value as low as 0.45 W/m²k.

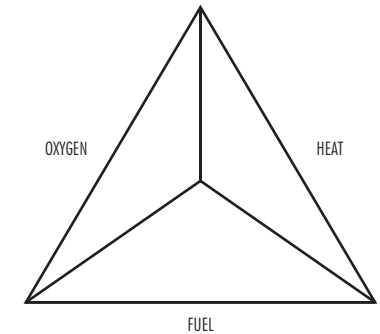
FIRE RESISTANCE

What is Fire?

Fire is a phenomenon which evolve heat and light energy upon burning a carbonaceous material. Chemically, it is an exothermic chemical reaction resulting from the combination of heat, fuel and oxygen. Fire involves rapid oxidation at high temperatures accompanied by the evolution of highly heated gaseous products of combustion and emission of visible and invisible radiation.

Fire Triangle

FIRE RESULTS FROM THE COMBINATION OF FUEL, HEAT AND OXYGEN.



Fire Protection Systems

Passive Systems

Compartmentation – A passive fire protection method

Separation of areas in a building to control fire and smoke by the use of:

- Wall Assemblies
- Floor Assemblies
- Ceiling Assemblies

Compartments are created by fire-resistance-rated assemblies which include:

- Fire walls
- Fire barriers
- Horizontal assemblies
- Fire partitions
- As a result, the fire can spread only to a limited area before meeting resistance from fire rated assemblies.

Fire Code: BS 476

This standard applies to vertical surface or panel fabrics. It assesses the flammability performance of flat materials, composites or assemblies used as the exposed surfaces of walls, partitions, screens or ceilings.

BS 476-22: 1997 Non load bearing member for fire resistance

This test measures the performance of a wall when exposed to heat from one face. Below mentioned factors give the fire rating of the system under consideration

1. Integrity - It is the ability of a system to prevent the penetration of hot gases and flames.
2. Insulation – It is the ability of the system to reduce the temperature rise on the unexposed side of the fire and therefore prevent fire spread through radiated heat.

Fire Resistance with Everest Fibre Cement Boards

Everest Fibre Cement Boards provide excellent fire resistance of up to 2 hours.

IMPACT RESISTANCE

BS 5234: 1992

BS 5234: Part 2 comprises a series of tests which examine a partition systems suitability for a given partition duty. Each test method is specific for the duty grade required and has strict acceptance criteria.

According to BS 5234: 1992 partition walls are given grade. These are related to the level of activity in adjacent spaces and the degree of care the partition is likely to receive. Grades are also determined by the structural and functional performance of the partition.

Grade	Description	Acceptable Usage
LD	Light Duty	Minimal stiffness. Is suitable for use in areas where there is a small chance of impact loads
MD	Medium Duty	Moderate stiffness. Is suitable for use in areas where there is some chance of accident occurring
HD	Heavy Duty	High stiffness. Is suitable for use in areas where there is chance of impact loads
SD	Severe Duty	Is suitable for use in areas prone to vandalism and rough use

Details of the test done as per BS 5234:1992

Stiffness	Partition wall is subjected to a horizontal force of 500 N applied at a height of 1.5 m. Maximum deflection and residual deformation should be within specified limits. Test stimulates bending caused by people leaning on, or person on ladder leaning against the partition wall.
Small Hard Body Impact	Partition wall is subjected to a 3Kg impactor with a 50 mm diameter steel sphere head, swung perpendicularly against the wall. Extent of damage is assessed. Test stimulates impact caused by sharp or pointed objects, such as trolleys and wheelchairs.
Large Soft Body Impact	Partition wall is subjected to a 50 Kg load in the form of spheroconical bag swung against the wall. Permanent deformation should not exceed 2 mm, with no structural damage. Test stimulates impact caused by people falling against the partition wall.
Door Slam	Depending on level of test to which the partition wall is to be tested, a 35 Kg or 60 Kg is slammed with a force of 15 Kg. No damage should be observed. Test stimulates door slams caused by wind, or people closing a door energetically.
Crowd Pressure	Partition wall is subjected to a sustained load transmitted through a 2.5 m horizontal beam, at height of 1.5 m. No damage or collapse should be observed. Test stimulates loads caused by a crowd leaning against the partition wall.

Lightweight Anchorages	Partition wall is subjected to a force transmitted through a bracket, with a shim plate positioned between the bracket and the surface of the partition wall. No damage should be observed and shim plate should not be dislodged. Test stimulates loadings from light weight fixtures such as wall fixtures, clothing hooks, basic wall shelving.
Heavyweight Anchorages	Similar to that of lightweight anchorages, except that configuration of brackets resembles that of heavyweight installations. Test stimulates loadings from heavyweight fittings such as wall cupboards, wash basins, water closets.

Impact Resistance with Everest Fibre Cement Boards

Everest Fibre Cement Boards provide highest severe duty of impact resistance.



**GO GREEN
WITH
EVEREST**

Green Solutions
Durable Green Material for Energy Efficient Buildings

CONTRIBUTION TOWARDS GREEN BUILDING

'Green Solutions' is our endeavour at Everest to save the planet by lowering the carbon footprint caused during construction. This is why the main components of Everest Drywall Systems are green materials. And contribute in earning significant LEED and GRIHA points.

For details please see overleaf.

Attributes of Everest Drywall Systems that contribute towards the Green Building Concept

Following are the attributes of individual products like Fibre Cement Boards, Solid Wall Panels and Wall Framing Systems, that contribute towards Green Building Concept:

- Use of 3 R's
 - Recycle of waste
 - Reduction - waste material
 - Recycled content
- Recyclable properties
- Easy Material Handling
- Easy and economical construction waste disposal
- Substitute for wood base products

Earn LEED Points with Everest Drywall Systems

With Everest FCB, reduce operating cost by 15%* and earn up to 4 LEED points

Credit	Everest Contribution
Minimum Energy Performance	Credit Potential 1 point
Construction Waste Management	Credit Potential 1 to 2 points
Resource Reuse	Credit Potential 1 to 2 points
Recycled Content	Credit Potential 1 to 2 points
Regional Materials	Credit Potential 1 to 2 points

*Everest Fibre Cement Boards contribute in saving electricity when complemented with other equipment/material used in Green Buildings

Earn GRIHA Points with Everest Drywall Systems

With Everest FCB, reduce operating cost by 15%* and earn up to 23 GRIHA points

Credit	Everest Contribution
Efficient water use during construction	Credit potential 1 point
Reduce the conventional energy demand	Credit potential 12 points
Use of low-energy material that minimises use of wood based products	Credit potential 4 points
Resource reuse	Credit potential 1 to 4 points
Regional material	Credit potential 1 to 4 points
Acceptable outdoor and indoor noise levels	Credit potential 2 points

Everest Green Solutions – a step towards a greener world

Composition

- Portland Cement
- Flyash
- Wood Pulp Fiber
- Silica
- Reactants (Flocculants) & Additives

Manufacturing

- Manufacturing process involves High Pressure Steam Curing (HPSC) in Autoclaves
- Standard of Manufacturing: IS 14862; ISO 8336 Part (E)



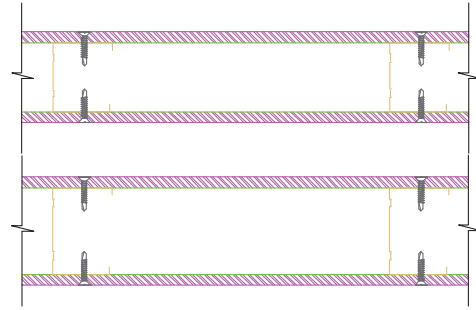


PARTITION/WALL SELECTOR

A ready reckoner from Everest Drywall Solutions to help you to choose on the system that best suits your requirements.

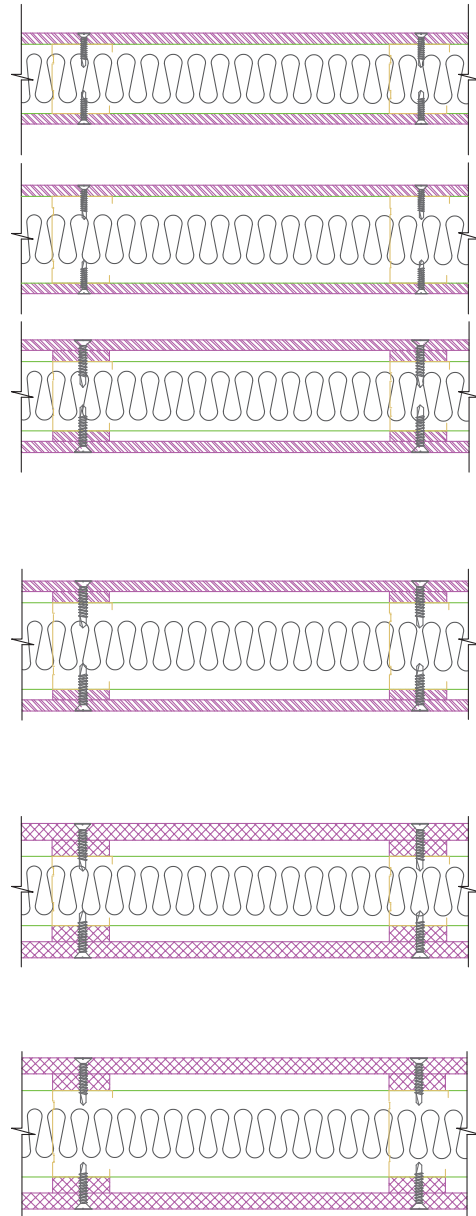
For details please see overleaf.

**The Partition Selector Internal Walls (Hollow Construction)
with Everest Fibre Cement Boards -
(Without Insulation)**



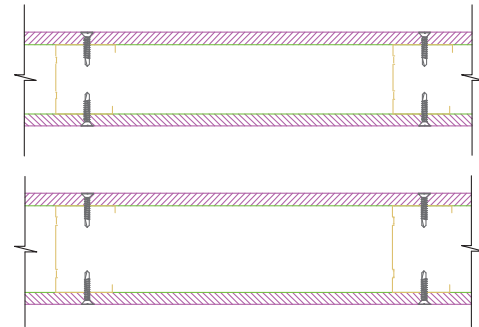
Partition Thickness (mm)	Partition Description	Recommended Partition Height (mm)	Sound Insulation STC (dB)	Fire Rating (Mins.)	Impact Resistance
67	8 mm Fibre Cement Board on either side of 51 mm Stud and Track	2745	42	30	Severe Duty
80	8 mm Fibre Cement Board on either side of 64 mm Stud and Track	3050	42	30	Severe Duty

**With Everest Fibre Cement Boards (50 mm thick Rockwool;
48 Kg/cu-m density in the cavity)**



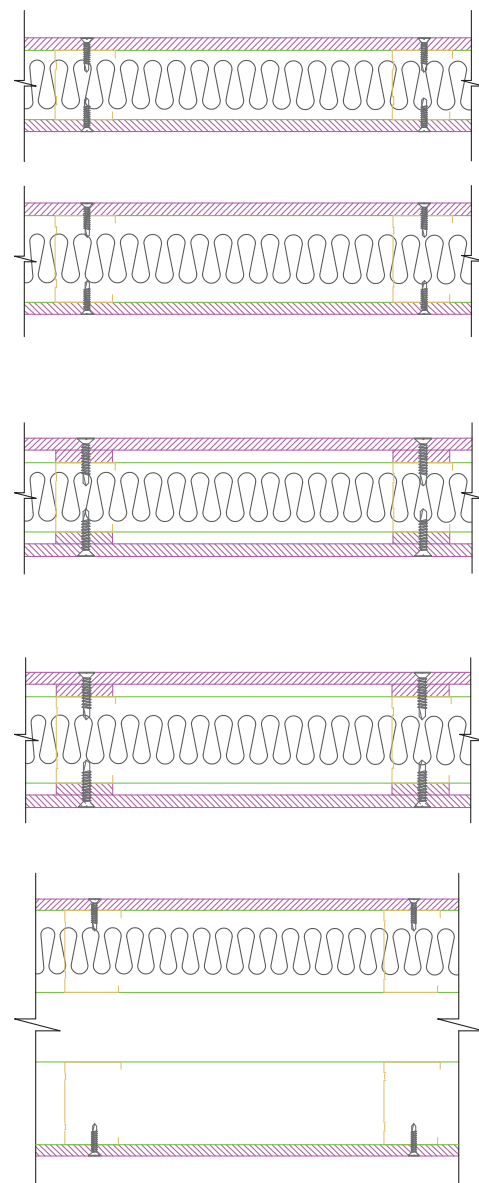
67	8 mm Fibre Cement Board on either side of 51 mm Stud and Track	2745	50	30	Severe Duty
80	8 mm Fibre Cement Board on either side of 64 mm Stud and Track	3050	50	30	Severe Duty
83	8 mm Fibre Cement Board Fillet on flanges of 51 mm Stud and Track, followed with 8 mm Fibre Cement Board screw fixed to the framework through the fillets	3050	50	35	Severe Duty
96	8 mm Fibre Cement Board Fillet on flanges of 64 mm Stud and Track, followed with 8 mm Fibre Cement Board screw fixed to the framework through the fillets	3355	50	35	Severe Duty
99	12 mm Fibre Cement Board Fillet on flanges of 51 mm Stud and Track, followed with 12 mm Fibre Cement Board screw fixed to the framework through the fillets	3965	52	60	Severe Duty
112	12 mm Fibre Cement Board Fillet on flanges of 64 mm Stud and Track, followed with 12 mm Fibre Cement Board screw fixed to the framework through the fillets	4270	52	60	Severe Duty

With Everest Heavy Duty Fibre Cement Boards (Without Insulation)



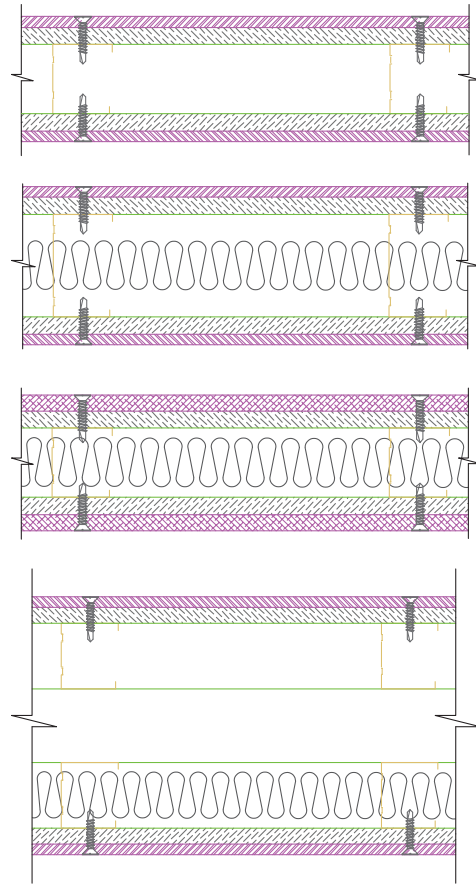
Partition Thickness (mm)	Partition Description	Recommended Partition Height (mm)	Sound Insulation STC (dB)	Fire Rating (Mins.)	Impact Resistance
69	9 mm Heavy Duty Fibre Cement Board on either side of 51 mm Stud and Track	3050	44	40	Severe Duty
82	9 mm Heavy Duty Fibre Cement Board on either side of 64 mm Stud and Track	3355	44	40	Severe Duty

With Everest Heavy Duty Fibre Cement Boards (50 mm thick Rockwool; 48Kg/cu-m density in the cavity)



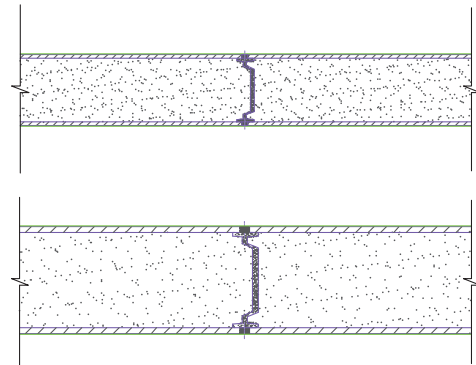
69	9 mm Heavy Duty Fibre Cement Board on either side of 51 mm Stud and Track	3050	52	40	Severe Duty
82	9 mm Heavy Duty Fibre Cement Board on either side of 64 mm Stud and Track	3355	52	40	Severe Duty
87	9 mm Heavy Duty Fibre Cement Board Fillet on flanges of 51 mm Stud and Track, followed with 9 mm Heavy Duty Fibre Cement Board screw fixed to the framework through the fillets	3355	52	45	Severe Duty
100	9 mm Heavy Duty Fibre Cement Board Fillet on flanges of 64 mm Stud and Track, followed with 9 mm Heavy Duty Fibre Cement Board screw fixed to the framework through the fillets	3660	52	45	Severe Duty
200	Separating wall with 9 mm Heavy Duty Fibre Cement Board on the either side of twin set of 64 mm stud and Track (Air cavity of 54 mm and one set of insulation only)	3660	55	60	Severe Duty

With a HYBRID combination of Everest Fibre Cement Boards and Gypsum Plaster Board (50 mm thick Rockwool; 48 Kg/cu-m density in the cavity)



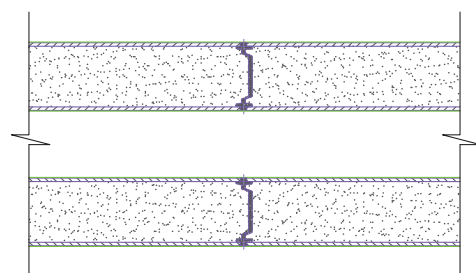
Partition Thickness (mm)	Partition Description	Recommended Partition Height (mm)	Sound Insulation STC (dB)	Fire Rating (Mins.)	Impact
92	8 mm Fibre Cement Board and 12.5 mm Gypsum Plaster Board on either side of 51 mm Stud and Track	3660	55	90	Severe Duty
117	8 mm Fibre Cement Board and 12.5 mm Gypsum Plaster Board on either side of 76 mm Stud and Track	3965	55	90	Severe Duty
100	12 mm Fibre Cement Board and 12.5 mm Gypsum Plaster Board on either side of 51 mm Stud and Track	3965	57	120	Severe Duty
200	Separating wall with one layer of 8 mm Fibre Cement Board and another layer of 12.5 mm Gypsum Plaster Board on the either side of twin set of 51 mm stud and Track (Air cavity of 57 mm and one set of insulation only)	3965	60	120	Severe Duty

INTERNAL WALLS (Solid Construction) With Everest Solid Wall Panel (Without Insulation)



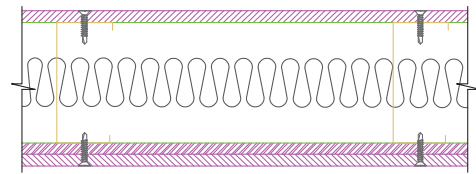
50	50 mm thick Solid Wall Panel fixed in between GI Track channels	3965	38	108	Severe Duty
75	75 mm thick Solid Wall Panel fixed in between GI Track channels	4575	40	134	Severe Duty

With Everest Solid Wall Panel (50mm thick Rockwool; 48Kg/cu-m density in the cavity)



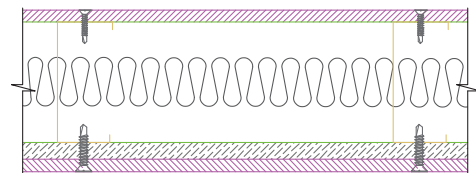
150	Separating wall with 2 sets of 50 mm thick Solid Wall Panel fixed in between GI Track channels (Insulation in cavity)	3965	55	> 134	Severe Duty
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External Walls (Hollow Construction)
 With a combination of Everest Fibre Cement Board and Everest Heavy Duty Fibre Cement Board (50 mm thick Rockwool; 48 Kg/cu-m density in the cavity)

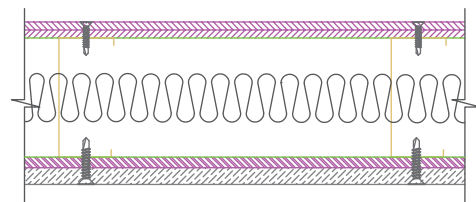


Partition Thickness (mm)	Partition Description	Recommended Partition Height (mm)	Sound Insulation STC (dB)	Fire Rating (Mins.) Resistance	Impact
115	9 mm Heavy Duty Fibre Cement Board on the external side and a combination of 8 mm Fibre Cement Boards and 9 mm Heavy Duty Fibre Cement Boards on internal side of 89 mm Everest Smart Steel Stud and Track	3660	60	120	Severe Duty

With a HYBRID combination of Everest Fibre Cement Boards and Gypsum Plaster Board (50 mm thick Rockwool; 48 Kg/cu-m density in the cavity)

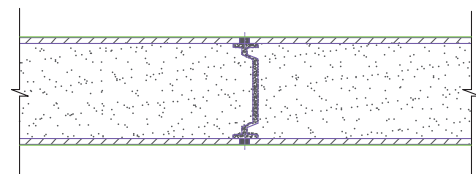


119	9 mm Heavy Duty Fibre Cement Board on the external side and a combination of 8 mm Fibre Cement Boards and 12.5 mm Gypsum Plaster Boards on internal side of 89 mm Everest Smart Steel Stud and Track	3660	57	> 120	Severe Duty
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122	2 x 6 mm Heavy Duty Fibre Cement Board on the external side and a combination of 8 mm Fibre Cement Board and 12.5 mm Gypsum plaster Boards on internal side of 89 mm of Everest Smart Steel Stud and Track	3660	60	120	Severe Duty
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EXTERNAL WALLS (Solid Construction)
 With Everest Solid Wall Panel (Without Insulation)



75	75 mm thick Solid Wall Panel fixed in between GI Track channels	4575	40	134	Severe Duty
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Notes

- Choice of the Drywall depends upon the desired Wall Height, Sound Insulation, Fire Rating and Impact Resistance. Any one or all the criteria determine the choice of partition system
- Everest provides INTERNAL (Hollow) Drywall Systems till a wall height of 10.5 to 12 m
- Everest drywalls are designed for different construction segment applications i.e. Industrial, Healthcare, Hospitality, Commercial, Corporates & Institutional
- The above systems are indicative and are subjected to customized design changes on desired performance parameters (Thermal Insulation, Sound Insulation & Fire Resistance) and subjected Wind Load, Seismic Load and any other defined structural loads

Everest Wall Boards Maximum Wall Height Table: Everest Rondo Steel Stud for Everest Dry Wall Systems
 Table 1A: Internal Non-Load Bearing Walls- L/240 for Everest Wall Boards

Stud Width	51mm	64 mm	76 mm	
BMT	0.50 mm	0.50 mm	0.55 mm	
Everest Wall Board (mm) Single Stud @ 610 mm c/c				
Lined Both Sides	1 x 8.0 mm	2680	2930	3520
	1 x 10.0 mm	2680	2930	3520
	1 x 12.0 mm	2710	2970	3660
Everest Wall Board (mm) Single Stud @ 305 mm c/c				
Lined Both Sides	1 x 8.0 mm	3280	3820	4380
	1 x 10.0 mm	3370	3930	4470
	1 x 12.0 mm	3530	4160	4740

Table 1B: Internal Non-Load Bearing Walls- L/360 for Everest Wall Boards

Stud Width	51mm	64 mm	76 mm	
BMT	0.50 mm	0.50 mm	0.55 mm	
Everest Wall Board (mm) Single Stud @ 610 mm c/c				
Lined Both Sides	1 x 8.0 mm	2680	2930	3520
	1 x 10.0 mm	2680	2930	3520
	1 x 12.0 mm	2710	2970	3660
Everest Wall Board (mm) Single Stud @ 305 mm c/c				
Lined Both Sides	1 x 8.0 mm	3280	3820	4380
	1 x 10.0 mm	3370	3930	4470
	1 x 12.0 mm	3530	4160	4740

Everest Heavy Duty Wall Boards Maximum Wall Height Table: Everest Rondo Steel Stud for Everest Dry Wall Systems
 Table 1A: Internal Non-Load Bearing Walls- L/240 for Everest Heavy Duty Wall Boards

Stud Width	51mm	64 mm	76 mm	
BMT	0.50 mm	0.50 mm	0.55 mm	
Everest Heavy Duty Wall Board (mm) Single Stud @ 610 mm c/c				
Lined Both Sides	1 x 6.0 mm	2610	2970	3510
	1 x 9.0 mm	2710	2970	3560
	1 x 12.0 mm	2710	2970	3560
Everest Heavy Duty Wall Board (mm) Single Stud @ 305 mm c/c				
Lined Both Sides	1 x 6.0 mm	3180	3710	4290
	1 x 9.0 mm	3470	3970	4560
	1 x 12.0 mm	3530	4160	4740

Table 1B: Internal Non-Load Bearing Walls- L/360 for Everest Wall Boards

Stud Width	51mm	64 mm	76 mm	
BMT	0.50 mm	0.50 mm	0.55 mm	
Everest Heavy Duty Wall Board (mm) Single Stud @ 610 mm c/c				
Lined Both Sides	1 x 6.0 mm	2360	2760	3130
	1 x 9.0 mm	2660	2970	3440
	1 x 12.0 mm	2710	2970	3560
Everest Heavy Duty Wall Board (mm) Single Stud @ 305 mm c/c				
Lined Both Sides	1 x 6.0 mm	2820	3270	3790
	1 x 9.0 mm	3070	3490	4010
	1 x 12.0 mm	3100	3670	4180



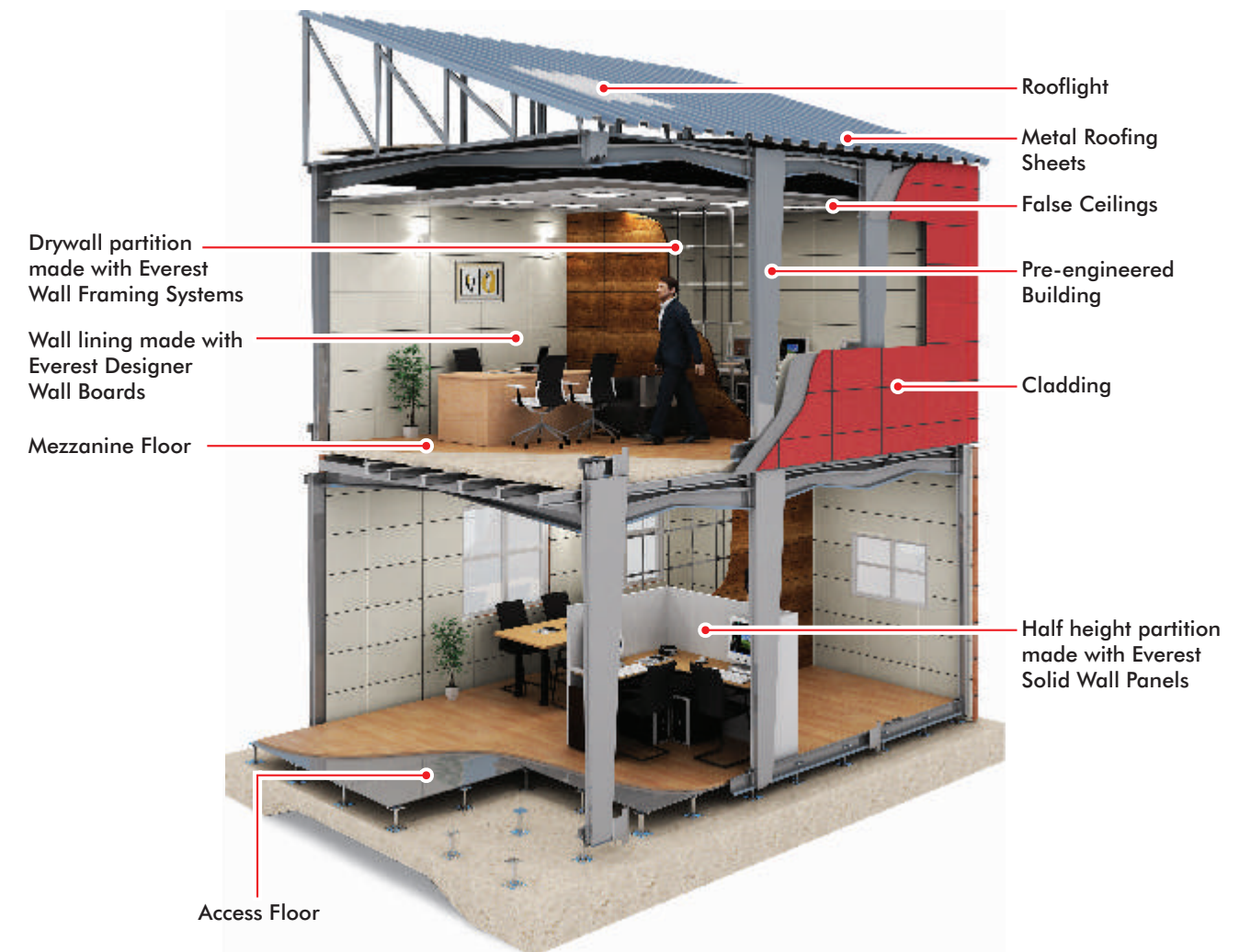
TRUSTED FOR 78 YEARS

Everest is one of India's fastest growing building solutions companies. Since 1934, people have trusted Everest with their most valuable assets, their factories, warehouses and homes. We have covered more than 1 billion sq. m. of industrial and residential roofs.

Today, we provide building products and building solutions for commercial, industrial and residential sectors in over 25 countries. In India, we distribute our products across 1,00,000 villages and 600 cities, through 5 state-of-the-art facilities, 6000 outlets, 38 sales depots and 14 offices. Our range of ready-to-use products provides solutions for your building needs in roofing, ceilings, walls, floors, cladding and doors.

We manufacture Pre-Engineered Buildings and Smart Steel Buildings for the industrial and commercial sectors. Everest Building Solutions. For Strength, Speed and Safety.

Complete Building Solutions



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