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Frequently asked questions on Mi Panel

MODULAR
INNOVATIVE
BUILDING
TECHNOLOGIES

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1. What is the impact strength of the MIBT panel?

Impact strength of the panels can be classified into hard body impact and soft body impact. The panel can take a hard body impact without any damage to the panels up to 15 Nm. For soft body impact, the value is 40 Nm. The panels do not show any visible failure even in case of door slamming.

2. What is the Pull out load of the panel in case of Fixtures, wall mountings?

The Pull out load of the panel in case of fixtures is 4 KN. (i.e 40kg's)

3. What is the shear strength of the panels?

Shear strength of the panel is applicable on fixtures like air conditioners and any other wall mountings. The panels are capable to sustain a shear load up to 74 KN (i.e. 740 Kg's).

4. What is the point load the panel can take?

Point Load is applicable in applications like mezzanine flooring and cavity flooring and the panels are capable to take point load of more than 450 kg's with minimum deflection of 2.4 mm's.

5. What uniformly distributed load (UDL) can the panel take?

The panels can take UDL (at 4 points) on 3 meter panels 400 kg's and 1.5 meter panel 900 kgs.
If three panels are joined and subjected to load it doubles and if five panels are joined it is approx. three times to the single panel as per the typical test results.

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6. What axial load can be taken by the panels?

Axial load applies for load bearing structures only. In case of roof load being transferred on to the walls, the 50 mm panels can take applicable load of 83 Kilo Newton per metre length.

7. Can the panels be used as flat roof?

Panels can be used as lean or gable roof with a minimum slope of 1 in 4 only. The panels can be used flat for Mezzanine and Cavity Flooring.

8. What is the maximum height up to which panel walls can be constructed?

The panels can be constructed up to 4.5 metres height for non load bearing walls. Walls more than 4.5 metres height would require a suitable steel frame work.

9. What is the maximum length of MIBT wall that can be constructed?

A maximum length of six metres can be constructed without any cross walls or supports. Intermediate supports with steel would be required for larger lengths.

10. What is the effect on Mi Panel structures in seismic zones?

Mi Panel structures are joined with tongue and groove arrangements. These joints are not rigid – being sealed with expandable fibre mesh tape with a fly ash and silica mixture to prevent penetration and therefore allow lateral movements to take place. This enables the structure to withstand movement in the earth's crust.

11. Can any panel damaged during installation be repaired?

Panels can easily be repaired by patching or flushing them (with the help of jointing compound and scrim tape).

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12. How would one do electrical conduiting and plumbing in the panels?

A simple matter of chasing as is the case in brick and mortar structures, with a normal circular saw will suffice quite comfortably. Conduits can also be precast into the panels for standard replicated designs.

13. What is in situ life of the panel?

MIBT panels have been in existence since 1971 and there have been literally thousands of structures that have been built since then with no known problems in terms of structural fatigue or disruptions. In any event, the structures are to be bonded by finance institutions and are designed to meet their criteria.

14. How do the facing sheets adhere to core, will it not de-laminate if it is loaded axially?

The facing sheets adhere to core because of the process known as cast-in situ. The core has cement which blends with the facing sheets forming a strong cement bond which is fully cured before leaving the factory. The chances of de-lamination when under axial load is very remote unless the load is more than the specified.

15. How to fix tiles on the panels?

Ceramic or other tiles can be fixed by using tile adhesive manufactured by reputed manufacturers, as per their recommendations.

16. Can the panels be cut or drilled, nailed or screwed?

MIBT have an excellent workability. They can be cut with a regular carpentry saw or power circular saw. It is recommended to pre-drill before nailing or fastening nut and bolts.

Glossary of Terms:

1 Fire Resistance

The ability of an element of building construction to withstand exposure to a standard temperature/time and pressure without loss of its fire separating function or load bearing function or both for a given time.

2 Integrity

The ability of a specimen of a separating element to contain a fire to specified criteria for collapse, freedom from holes, cracks and fissures and sustained flaming on the unexposed face.

3 Load bearing Capacity

The ability of a specimen of a load bearing element to support its test load, where appropriate without excluding specified criteria with respect to either the extent of, or ratio of deformation or both.

4 Sound transmission Coefficient (STC)

The STC rating is a single number guide used to rate acoustic barriers according to their effectiveness in reducing sound transmission loss.

5 Thermal conductance (w/m^2 ok)

The heat flux density through a given slab of material or of a given structure divided by the temperature difference between the hot and cold faces under steady-state conditions.

Glossary of Terms:

6 Thermal Conductivity (mo k/w)

The heat flux density under steady-state conditions divided by the temperature gradient in the direction of flow.

7 Thermal resistance (m^2 ok/w)

The reciprocal of thermal conductance.

8 Thermal transmittance (w/m^2 ok), U – value

The heat flux density through a given structure divided by the difference in environmental temperatures on either side of the structure.

9 Water permeability

The capacity of a material to allow water to pass through it under pressure is known as its water permeability. It is described as the quantity of water that will pass through the material in one hour at constant pressure, the cross sectional area of the specimen being 1 cm^2.

10 Abrasion

The resistance of a material to the abrasion is found out by dividing the difference in weights of specimens prior to and after abrasion with the area of abrasion.

11 Frost Resistance

The ability of water saturated material to resist repeated freezing and thawing without considerable decrease of mechanical strength or visible signs of failure is known as the frost-resistance.

Glossary of Terms:

12 Modulus of rupture

Maximum transverse breaking stress applied under specified conditions that a specimen withstands before rupture.

13 Slenderness ratio

The ratio of the effective height or length to the effective thickness.

14 Single leaf wall

A wall of blocks laid to overlap in one or more directions set solidly in mortar

15 Laterally loaded walls

Walls subjected mainly to loads normal to the face of the wall.

16 Design load

The characteristic load multiplied by a partial safety factor for material strength.

17 Partial safety factors

Factors applied to characteristic strengths / loads to give design strengths / loads to reflect the uncertainty with which particular parameters (strength / load etc.) can be assessed.

18 Shear

Generally, an internal force tangential to the plane on which it acts. The consequences of forces acting perpendicular to the member and causing internal tensile stresses along diagonal directions.