The Replacement for Block Walls
Dubai Civil Defense approved
Compliant with Local & International Standards

EASY PANEL
The Lightweight Concrete Wall Technology

EASY PANEL is an innovative and highly efficient construction wall product and system which delivers unbeatable VALUE to the building sector. It has been developed to help developers, builders and consultants meet the needs of today’s fast-paced construction requirements.

It accelerates the building assembly schedule and reduces the installation/finishing expenses - a solid product, competitively priced. Simply put, it is the smart engineering and business solution for exterior walls and interior partitions.

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Complaint with Local & International Standards

EasyPanel Features
- Consistent High Quality Finish
- Lightweight & Easy to Handle
- Simple Construction and Assembly method
- Flexible Surface Finishing
- Fire Resistant for 2 hours +
- Superior Thermal Insulation
- Superior Noise Reduction
- Ease of cutting and shaping
- Easy installation of electric and sanitary extensions
- "T" and "Corner" sections for quick and accurate corner finishing
EasyPanel Wall Systems

EASY PANEL is a sandwich wall panel made of cement board on the exterior. The interior composite core material is a system of lightweight concrete mix made from ordinary Portland cement, additives, aggregates, admixtures and Expanded Polystyrene. This combination of material delivers rigidity, strength and the insulation factor needed. It also provides flexibility for the customer in the use of the wall to meet many requirements. The presence of lightweight aggregates, air entrainers and EPS acts as an insulator and provides Easy Panel with green building material characteristics.

The panels are available in thicknesses of 75, 100, 150 and 200 mm, and are available in heights of 2.44 and 3.0 meters. One side of the panel has a male-tongue profile and the other a female-groove profile. When the panels are erected the tongue and groove fit together to form a precise fit. The result is a high quality wall ready for finishing in a fraction of the time taken by conventional methods.

The panels are non-load bearing and electrical conduits can be embedded inside the walls. The system offers a practical solution for plumbing and other facility management requirements. Doors and windows can be installed quite simply.

In order to speed the assembly process and reduce manpower requirements the panels are manufactured in 610 mm wide sections to enable easy handling. The reduction of manpower and significantly faster assembly are key elements of the value proposition of the EASY PANEL WALL SYSTEM.

Applications

The advanced technology and engineering that has been applied to develop the EASY PANEL makes it suitable for the construction of most types of units. It is the ideal solution for the assembly of partition walls in single- and multi-story buildings. The EASY PANEL system offers clear advantages to the client, developer and contractor:

- Fast Assembly (Time Saving)
- Easy Assembly (Less Labor)
- Competitive Pricing (Cost Saving)
- Simple Finishing by Eliminating Plastering (Cost Saving in Finishing Expenses)

The combined savings in the material cost along with the savings in time and labor expenses delivers a clear advantage to the client. An added benefit is the much lighter weight of EASY PANEL which often results in less structural re-enforcement being required for the building.

- Large-scale residential development projects
- Homes
- Apartment buildings
- Schools
- Offices
- Hotels
- Clinics
- Commercial buildings
- Retail Facilities

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Stronger • Better • Faster

...The Replacement For Block Walls
EASYPANEL is manufactured to the highest quality standards and allows the rapid building of custom made single or multi family home communities. It has been developed to solve the need for conventional housing throughout the Middle East and North Africa regions.
EasyPanel

Single Level & Multi Level Buildings

EASY PANEL is versatile for multiple applications such as walls for single level and multi level buildings. It is a single panel walling system that serves as both the internal and external wall and eliminates the need for bricks, blocks, timber and plasterboard linings.
EASYPANEL is the ideal solution for the assembly of interior and partition walls in single- or multi-story buildings. Easy to install, EASYPANEL sections can be quickly erected and finished to ensure speedy turnaround.
EasyPanel

Warehouses / Industrial Buildings

The EASYPANEL system can be used as cladding in certain applications, such as warehouses and industrial areas. Compared with conventional concrete block or pre-cast wall systems, the EASYPANEL offers much quicker assembly of a rigid wall system at a competitive price.
The EASYPANEL system is ideal for a wide range of commercial building construction. It provides a cost competitive alternative to conventional building methods by eliminating block wall work.
Panels on-site
Fixing of Uchannels on-site
Rapid Installation
Building with the EASYPANEL system contributes to rapid installation and a reduction in manpower. Economical large-format panels and a ready-finished surface means the walls do not need to be plastered. This ensures much shorter construction cycles.

Easy Wall Finishing
No Plastering / No Wet Trade
One of the biggest advantages of the Easy Panel is the elimination of the conventional plastering process, which is time consuming and expensive. Plastering is a serious impediment to the acceleration of a project schedule.

EASYPANEL has semi-finished surfaces so all that is required post-erection is simple paste and paint. EASYPANEL is also flexible enough to allow other finishes, such as stone, wood, ceramics, EIFS system or even plaster.

Thermal Insulation/Energy Saving
EASYPANEL is characterized by its superior thermal insulation. Since the expanded polystyrene (EPS) in the core acts as an air and vapor barrier it allows temperatures to be maintained for longer periods above or below ambient conditions. EASYPANEL offers an energy-efficient & air tight building, providing greater comfort and significant savings in heating and cooling costs.

Where higher levels of thermal insulation are required EASYPANEL offers a PU-insulated option. Sandwiched within the core is a thick layer of solid polyurethane foam, one of the world’s most effective insulating materials.

System Advantages

“T” & “Corner” Sections
One of the most time consuming aspects of conventional block built walls is the finishing of corners. EASYPANEL offers a full range of “T” and “Corner” sections, allowing fast, clean and accurate finishing of corners and intersections.

Robust Construction
Despite their lightweight composition buildings which use of EASYPANEL walls are strong and capable of withstanding rough treatment and natural calamities. EASYPANEL partition walls can bear heavy attachments such as kitchen cupboards, wash basins and televisions with proper anchoring. Complies with BS 5423/2: 1992

Stronger Better Faster
System Advantages

Easy Wall Finishing

...The Replacement For Block Walls
Direct Cost Savings

The above advantages also translate into direct cost savings over and above the inherent savings that are provided by early project completion:

- Reduction of wet trade, elimination of plastering.
- Reduction of wastage
- Less labor related costs

Light Weight

The standard dimensions of the EASYPANEL is 610 mm by 3 meters. Because of its light weight – 70 – 80% lighter than conventional blocks – fewer laborers can handle each panel much more efficiently. The lightness of the EASYPANEL may also have a positive effect on the structural design of multi-story buildings by reducing, in some cases, the cost of certain structural elements – for example, grade beams and slab thicknesses.

Average Panel Weights

<table>
<thead>
<tr>
<th>Panel thickness -&gt;</th>
<th>75mm</th>
<th>100mm</th>
<th>150mm</th>
<th>200mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.44m length</td>
<td>60kg</td>
<td>70kg</td>
<td>90kg</td>
<td>110kg</td>
</tr>
<tr>
<td>3.00m length</td>
<td>68kg</td>
<td>85kg</td>
<td>105kg</td>
<td>125kg</td>
</tr>
</tbody>
</table>

Acoustic Insulation

EasyPanel Acoustic Walls are specifically engineered to dampen sound between rooms and corridors. These panels are the ideal solution for residential units, hotels, schools and office partitions. EasyPanel acoustic walls provide high levels of acoustic insulation for serene living, dwelling and working. The sound reduction index value of a 100mm standard EasyPanel is 37 dB whereas the EasyPanel acoustic walls can achieve up to 60 dB, higher than conventional concrete blocks.

Fire Resistant

EASYPANEL is certified by CCS based on the Qplus scheme as being non-combustible with a 2 hour fire resistance level.

Electrical & Pipe Installation

The panels can be easily cut and channeled to install electrical or plumbing extensions, and the patching process is simple and quick. The extensions can be factory-embedded, fixed b/w walls, chaste on site or surface mounted.
Easy Door & Window Installation

Installation of doors and windows is easy with EASYPANEL. A simple process allows door and window openings to be cut and prepared for assembly.

Environmental Attributes

- Free from odors
- Does not emit toxic fumes
- No CFC-emitting chemicals
- Does not contain asbestos
- Low carbon footprint
Comparison Chart

Comparison Chart b/w 200mm Block and 150mm EASYPANEL

<table>
<thead>
<tr>
<th>Description</th>
<th>200 mm Concrete Block</th>
<th>EASYPANEL 150 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (Kg/m³)</td>
<td>1,800</td>
<td>450-600</td>
</tr>
<tr>
<td>Compressive Strength (N/mm²)</td>
<td>3.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Water Penetration</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Sound Insulation (dB)</td>
<td>30</td>
<td>48</td>
</tr>
<tr>
<td>Thermal Conductivity (W/m²K)</td>
<td>0.1760</td>
<td>0.029</td>
</tr>
<tr>
<td>Fire Rated</td>
<td>...</td>
<td>Certified for 2 hours</td>
</tr>
<tr>
<td>On-site Installation</td>
<td>Slow</td>
<td>Fast</td>
</tr>
<tr>
<td>Plastering</td>
<td>Requires plastering</td>
<td>Ready to plaster and paint</td>
</tr>
<tr>
<td>Electrical &amp; Plumbing works</td>
<td>Channels need to be chased</td>
<td>Electrical and plumbing lines are easily and quickly installed into the wall</td>
</tr>
<tr>
<td>Labor</td>
<td>Large workforce required</td>
<td>Less labor required and faster assembly</td>
</tr>
<tr>
<td>Carbon Footprint</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Energy efficiency</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Axial Load</td>
<td>7 tons</td>
<td>12 tons</td>
</tr>
<tr>
<td>Bending load</td>
<td>600 Kg</td>
<td>1.4 tons</td>
</tr>
</tbody>
</table>

Technical Specifications

EASYPANEL DIMENSION DETAILS

<table>
<thead>
<tr>
<th>Panel Thickness (mm)</th>
<th>75</th>
<th>100</th>
<th>150</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height (mm)</td>
<td>2.440</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Core Density</td>
<td>500-600 Kg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panel Weight (Kg)</td>
<td>60</td>
<td>70</td>
<td>90</td>
<td>110</td>
</tr>
<tr>
<td>Height (mm)</td>
<td></td>
<td></td>
<td>3,000</td>
<td></td>
</tr>
<tr>
<td>Panel Weight (Kg)</td>
<td>68</td>
<td>85</td>
<td>105</td>
<td>125</td>
</tr>
<tr>
<td>Thermal Conductivity, k (W/mK)</td>
<td>0.1760</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal Resistance, R (m²K/W)</td>
<td>0.988</td>
<td>0.730</td>
<td>1.014</td>
<td>1.299</td>
</tr>
<tr>
<td>Thermal Resistance, u (W/m²K)</td>
<td>1.701</td>
<td>1.370</td>
<td>0.986</td>
<td>0.770</td>
</tr>
<tr>
<td>Width (mm)</td>
<td>610</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement Board Thickness (mm)</td>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ROBUSTNESS & STRENGTH**

Tested on 100 m Thick Panel

<table>
<thead>
<tr>
<th>BS 5234-Part-2 : 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Partition Stiffness</td>
</tr>
<tr>
<td>B. Surface Damage by Hard Body Impact</td>
</tr>
<tr>
<td>C. Resistance to Damage by Impact from a Large Soft Body Impact straight partition - Right angle junction</td>
</tr>
<tr>
<td>D. Resistance to Perforation by Small Hard Body Impact straight partition - Right angle junction</td>
</tr>
<tr>
<td>E. Resistance to structural damage by multiple impacts from a large soft body</td>
</tr>
<tr>
<td>F. Effects of door slamming</td>
</tr>
<tr>
<td>G. Resistance to crowd pressure</td>
</tr>
<tr>
<td>H. Lightweight anchorage pull-out test</td>
</tr>
<tr>
<td>I. Lightweight anchorage pull-down test</td>
</tr>
<tr>
<td>J. Heavyweight anchorage (wash basin) eccentric downward loading</td>
</tr>
<tr>
<td>K. Heavyweight anchorage (high level wall cupboard) eccentric downward loading</td>
</tr>
</tbody>
</table>

GRADES: LD - light duty; MD - medium duty; HD - heavy duty; SD - severe duty
Note: 1 kg = 10 Newtons (N)
Frequently Asked Questions

Technical FAQs

1. Is the EASYPANEL system fire resistant?
   Yes, EASYPANEL has been certified by BM Trada as being non-combustible with a 2-hour fire resistance level. Also, no toxic fumes are released when EASYPANEL is exposed to fire.

2. What is the weight of a 3m high EASYPANEL?
   The 100mm thick panel weighs approx. 1.85 kg, while the 150mm panel weighs approx. 3.95 kg.

3. What is the density of EASYPANEL?
   EASYPANEL densities vary between 500 kg/m³ to 600 kg/m³.

4. What is the maximum height to which EASYPANEL walls can be constructed?
   The panels can be constructed up to 4.5 meters in height for non-load bearing walls. Walls higher than 4.5 meters would require a suitable structural framework.

5. What is the maximum length of EASYPANEL wall that can be constructed?
   A maximum length of six meters can be constructed without any cross walls or supports. Intermediate supports with steel would be required for larger lengths.

6. What is the composition of the EASYPANEL system?
   EASYPANEL sections are made of cement board panel exteriors and filled with a mixture of lightweight concrete and expanded polystyrene beads. The panels feature a tongue and groove system, which makes the joining of panels fast, easy and highly accurate.

7. What uniformly distributed load (udl) can the panel take?
   The panels can take udl (at 4 points) on 3 meter panels 400kgs and 1.5 meter panel 900kgs. If 3 panels are joined and subjected to load it doubles and if 5 panels are joined it is approximately 3 times to the single panel.

8. What is Axial Load Can Be Taken By The Panels?
   Axial load applies for load bearing structures only. Incase of roof load being transferred to the walls, The 50mm panels can take applicable load of 83kilo new ton per meter length.

9. Can any panel damages during installation be repaired?
   Panels can easily be repaired by patching or flushing them (with the help of jointing compound and scrim tape).

10. What is the life of the panel?
    Easypanel® panels are made up cement, binder, natural fiber sand minerals. It has been so formulated that it can with stand vagaries of weather. The life of easypanel® is expected to be just like any other cement based building materials.

11. What is the effect of weather on the panels?
    Panels contain cement and can resist different weather conditions from freezing temperature of -20 degree Celsius to extreme hot temperature.

General FAQs

1. Can a television be hung on an EASYPANEL wall?
   Yes. Any item can be hung up to 100kg per mechanical fixing system.

2. Is it possible to insert electrical conduit after the panels have been installed?
   Yes. Panels can easily be cut and channeled to install electrical conduit. The patching process is quick and simple.

3. Is plastering required after panel installation?
   No. No wet trades needed. EASYPANEL is semi-finished. All that is required is a simple process of paste and paint.

4. What kind of time savings are possible with EASYPANEL?
   EASYPANEL walls can be erected and finished 3 to 4 times faster than traditional concrete block systems using less labor.

5. What is the maximum height to which EASYPANEL walls can be constructed?
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7. Is this a Green product?
   Yes. EASYPANEL has very low wastage in the manufacturing and construction process and a low carbon footprint.

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General Installation Method

Panels arrive to site in protected pallets

Minimum labor required

Application of PU adhesive prior to fixing of panels on-site

Application of mesh

Installation of the base “U” channel

Simple installation of the panels

Simple and quick cutouts for electrical conduits

Finished and unfinished walls
Since inception in 1961, TSSC, a primary member of Harwal Group has been setting manufacturing benchmarks in the region with its engineering excellence. The ISO 9001:2008 certified company manufactures a diverse range of products and offers a range of services from its facilities spread across Sharjah, Dubai and Abu Dhabi. TSSC is the largest manufacturer of insulated panels for roofing and cladding in the Middle East. The building materials manufactured by TSSC are fire rated and carry individual product certifications. With over 4 decades of experience, state of the art manufacturing facilities and the largest production capacity in the Middle East, TSSC manufactures products to international quality standards and cater to customer demands by ensuring timely delivery and providing exceptional service.

Range of Products Manufactured by TSSC

Building Materials
- Composite Panels
- Prefab Cladding Sheets
- Seamless Roofing System
- Glass & Aluminium Systems
- Doors & Windows

Metal Storage Solutions
- Racking Systems
- Metal Sheds

Refrigerators & Freezers
- Vis-à-vis Coolers & Freezers
- Water Coolers
- SS Refrigerators & Freezers

Stainless Steel Equipments
- Laundry & Kitchen
- Hospital

Services
- Galvanizing