Technology with Strength, Safety and Privacy

For buildings which require particularly strong walls such as hospitals, educational institutions, hotels, condominiums and residences and additional features such as sound proofing, fire safety, a smooth appearance and an easy-to-modify configuration, the Multiwall System is the solution for all of your requirements.

“A new generation of special gypsum wall developed for unlimited-design solutions with a smooth surface which will not craze or crack during its lifetime. In addition, with its optimized strength, durability, it will save both time and construction costs compared to other brick wall systems.”
The MultiWall System is a complete light wall system which is suitable for any design implementation and it also has the advantage of “3S” properties over regular light walls.

**Value for money:** It can be installed in a variety of configurations to fit your needs.

**Unified structure:** It will not craze or crack and it is easy to paint, tile or wallpaper.

**Freedom of design and area rearrangement as desired:** Because of its beam-free structure, it can easily be reconfigured to meet future needs as required.

**Fast and quick installation:** Because is it a dry system.

**14%*** Cost-saving for building construction:** Because it is 6 times lighter than brick walls.

**Trouble-free maintenance:** For internal wall system.

**Environmentally-friendly:** Because it is made with ingredients from natural gypsum, without asbestos and carcinogens, it is both safe and recyclable.

**Excellent sound-proofing:** this feature can insure your complete privacy using the wall designed for protecting against any sound at a level of 41–53* dB.

**Strength and durability:** this product passed the BS 5234 Standard with a “Severe Duty” level comparable to brick-mortar, so it can guarantee its strength and durability when installing a wall-mounted cabinet weighting up to 400 kg. **

**Fire safety:** this product has been shown fire resistance performance up to 1 hour which allows occupants to safely evacuate to safe place.

**MultiWall System Features**

- **Value for money:** It can be installed in a variety of configurations to fit your needs.
- **Unified structure:** It will not craze or crack and it is easy to paint, tile or wallpaper.
- **Freedom of design and area rearrangement as desired:** Because of its beam-free structure, it can easily be reconfigured to meet future needs as required.
- **Fast and quick installation:** Because is it a dry system.
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- **Trouble-free maintenance:** For internal wall system.
- **Environmentally-friendly:** Because it is made with ingredients from natural gypsum, without asbestos and carcinogens, it is both safe and recyclable.

*When installing with sound-proof insulation.

** Test for a 3.60 x 4.80 m. wall installed with a 90-cm door frame by installing a 15 mm. MultiWall System with galvanized studs and 41 mm. screws. The humidity and temperature for the testing conditions were 54% and 19.1 °C, respectively.

*** Calculated for an 8-floor building.
System Features
The MultiWall System

A newly innovated gypsum board system with its various features will provide privacy, strength, and safety for both living and the property. Three excellent technologies of Elephant Gypsum Board are integrated as follows:

1. **MultiWall System** with a special thickness of 15 mm., dimension 1200x2400 mm.
2. **Elephant Prowall Metal Studs** C74&U76 or C64&U66 as qualified by TIS. 863–2532 is made of hot dipped galvanized steel as TIS. 50–2538 standard thickness of 0.52 mm.
3. **Elephant Easy Joint System** High performance materials and accessories by Siam Gypsum

### MultiWall System Performance

<table>
<thead>
<tr>
<th>Figure</th>
<th>Specification</th>
<th>Nominal Thickness (mm.)</th>
<th>Max Height (m.)</th>
<th>STC (dB)</th>
<th>FRL (min)</th>
<th>Strength Grade BS 5234</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td>A 15 mm. MultiWall Gypsum on each side installed with 0.52 mm. Prowall C64 C-Studs</td>
<td>94</td>
<td>4.45</td>
<td>41</td>
<td>60</td>
<td>Severe</td>
</tr>
<tr>
<td><img src="image2.png" alt="Image" /></td>
<td>A 15 mm. MultiWall Gypsum on each side installed with 0.52 mm. Prowall C74 C-Studs</td>
<td>104</td>
<td>4.87</td>
<td>44*</td>
<td>60</td>
<td>Severe</td>
</tr>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td>A 15 mm. MultiWall Gypsum on each side installed with 0.52 mm. Prowall C64 C-Studs and 50 mm. NoizeBloc Sound Block</td>
<td>94</td>
<td>4.45</td>
<td>48</td>
<td>60</td>
<td>Severe</td>
</tr>
<tr>
<td><img src="image4.png" alt="Image" /></td>
<td>A 15 mm. MultiWall Gypsum on each side installed with 0.52 mm. Prowall C92 C-Studs and 100 mm. NoizeBloc Sound Block</td>
<td>122</td>
<td>5.57</td>
<td>53</td>
<td>60</td>
<td>Severe</td>
</tr>
</tbody>
</table>

*Simulated from INSUL v. 8.0.12, have +/- 3 dB error.*
Usage area
Wallboard between rooms, internal walls and corridors

The integrated **MultiWall System** features a beautiful appearance, cost efficiency, easy installation and quick reconfigurations.

- **Room Walls** for areas which require privacy and beauty. It is suit for hospitals, educational institutions and homes.

- **Internal Walls** for areas which require beautiful appearance, strength, durability and safety. It is suit for educational institutions, hospitals, department stores and residences.

- **Corridor Walls** for corridors requiring a beautiful appearance.

**MultiWall System** is qualified for Severe Duty (SD) according to BS 5234

<table>
<thead>
<tr>
<th>Requirement Tested</th>
<th>Severe Duty</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stiffness Test</td>
<td>✔</td>
<td>50 kg load at height of 1.5 m. The deflection should be over 1 mm. when the load is removed</td>
</tr>
<tr>
<td>Surface Damage by Small Hard Body Impact Test</td>
<td>✔</td>
<td>To test wall damage using 3 kg weight with 50 mm. diameter swayed to the wall at 63.6° and 131.8° degree angle 10 times for testing body damage and hole in the wall.</td>
</tr>
<tr>
<td>Surface Penetration by Small Hard Body Impact Test</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Resistance to Damage by Large Soft Impact Test</td>
<td>✔</td>
<td>To test wall damage and wall structure using 50 kg. dropped-like sand bag swayed to the wall and the wall stud. The pass criteria are no damage to the wall.</td>
</tr>
<tr>
<td>Resistance to Structural Damage by Large Soft Impact Test</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Door Slamming Test</td>
<td>✔</td>
<td>Open and close the 60 kg. weight door with 15 kg forces 100 times. To pass the criteria, must have no evidence of damage.</td>
</tr>
</tbody>
</table>

**Specification**

The MultiWall System has qualified under the stiffness test in Severe Duty grade as BS 5234 Part 2 standard. Fire resistance of at least one hour as BS 476 Part 22 standard, 50 dB for Sound Transmission Class as ASTM E90. This was tested with an installed layer of 1200x2400 mm. Tapered-edge MultiWall Gypsum in each side in accordance with TIS 219-2524, ASTM C1396 and BS 1230, secured with a 25 mm. screw and Elephant single stud system containing 64x34/32x0.52 mm. Prowall C64 and 66x30x0.52 mm. Prowall U66 or 74x34/32x0.52 mm. Prowall C74 and 76x30x0.52 mm. Prowall U76 qualified under the manufacturing of galvanized steel as TIS 863-2532 and galvanized stainless steel as TIS 50-2538 and JIS G3302. The joint is coated by Elephant Easy Joint Compound, a product of SIAM GYPSUM INDUSTRY (SARABURI) CO., LTD.

Given the installation according to the method and standard of manufacture, the sound installation can add 32 kg/m² and 50 mm. NoizeBloc glass wool insulation and sound-proofing (fire-proofing) sealing material to seal the joint for enhancing the sound-proofing and fire-proofing as required.

* Installed Prowall C74 and Prowall U76 with 32 kg/m² and 50 mm. NoizeBloc glass wool insulation.
Performance comparison between The MultiWall System and conventional wall systems

<table>
<thead>
<tr>
<th>Feature/Performance</th>
<th>Brick Wall</th>
<th>Lightweight Block Wall</th>
<th>MultiWall System</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Thickness</td>
<td>100 mm.</td>
<td>100 mm.</td>
<td>94–122 mm.</td>
</tr>
<tr>
<td>Weight</td>
<td>180 kg/m² (including plaster)</td>
<td>90 kg/m² (including plaster)</td>
<td>30 kg/m²</td>
</tr>
<tr>
<td>Installation Capacity</td>
<td>4–5 m²/man/day</td>
<td>15 m²/man/day</td>
<td>20–25 m²/man/day</td>
</tr>
<tr>
<td>Sound Transmission Class</td>
<td>35–40 dB**</td>
<td>38 dB**</td>
<td>41–53 dB**</td>
</tr>
<tr>
<td>Wall Surface</td>
<td>Depending on craftsman’s skill</td>
<td>Depending on craftsman’s skill</td>
<td>Smooth with the gypsum board level</td>
</tr>
</tbody>
</table>

**System installation**
- System installation should leave the wall line for new construction or should chisel the wall for the ductwork system so it is difficult for finish the job in that area.
- System installation should leave the wall line for new construction or should chisel the wall for the ductwork system so it is difficult for finish the job in that area.
- System installation can route within the space of the wall during construction so that it will not affect the installation process. It can be added without chiseling the wall line later.

**Drilling, Fixing and Hanging**
- Installed by driving anchorage into the wall so the load is dependent on anchorage type, brick quality and mortar.
- Installed by driving anchorage into the wall so the load is dependent on anchorage type, block quality and mortar.
- Typically, the anchoring point with tensile strength will cause trouble due to the soft content of the lightweight block.

**Wall system migration**
- It is difficult, could destroy the wall and should have a supporting structure.
- It is difficult, could destroy the wall and should have a supporting structure.
- It is easy and convenient to reconfigure, with no need for a supporting structure.

Remark: ** depend on quality of brick and plastering

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**Project References**

**Redland Green School, Bristol**

**Museum of Liverpool**