**What are the Benefits of Using the MASTERIMPACT® Solid Wall Systems?**

**MASTERIMPACT®** is an incoherent silicate cellular product which is 100% asbestos free, it is manufactured in the 1000–2000 capacity management system. The board is specifically designed for use in high density building or any high impact resistance is required. It is especially suitable for use in very heavy duty industrial applications. **MASTERIMPACT®** solid wall systems are designed with fast evaporation rates, and to be capable of 15% load bearing.

**MASTERIMPACT®** has a high degree of stability, it is classified as a Class G product in accordance with building regulations and in accordance with the criteria of BS 4567: Part 2: 1987.

The **MASTERIMPACT®** solid wall systems provide a FIRE RESISTANCE PERFORMANCE of up to 3 hours in terms of integrity and insulation as an internal or external leaf. Based on a half hour wall and in accordance with the criteria of BS 4567: Part 12: 1987.

Not only fire resistant, **MASTERIMPACT®** is WATER PROOF as well. This benefit is permanent since the manufacturing process of the board, combined with the cement mixture forming the core, allows this system to be used in wet areas without the need for concrete. **MASTERIMPACT®** has been subject to, and passed test for water penetration, in accordance with the criteria of BS 4315: Part 2: 1970.

**MASTERIMPACT®** solid wall systems are SUPER ACoustIC PROPERTIES, and provide a significant airborne and impact sound insulation. The **MASTERIMPACT®** solid wall systems are designed for use in both residential or business environments.

**THE HIGH IMPACT MATERIAL FOR SOLID WALL SYSTEMS**

Unlike working with concrete or masonry, services can be installed without the need for traditional methods of using masonry contractors. The installation of the **MASTERIMPACT®** solid wall systems are much FASTER TO INSTALL than traditional methods of using masonry contractors.

**THE INSTALL & FASTER TO CLEAN**

When compared to concrete or masonry constructions, the **MASTERIMPACT®** solid wall systems offer a much FASTER TO CLEAN FOOTPRINT in terms of thickness and size which makes even a greater degree of flexibility to the building design team.

**MECHANICAL PROPERTIES**

- **Bending strength (powder dry):**
  - Lengthwise: 12,000 N/m²
  - Widthwise: 9,000 N/m²

- **Compression strength (dry):**
  - Lengthwise: 9,500 N/m²
  - Widthwise: 7,500 N/m²

- **Dilatation coefficient (dry):** 10.500%/K

- **Screw retention strength** (screw diameter 3 x 32 mm): 584 N (average)

**FIRE RESISTANCE**

- **Compliance to BS 476: Part 4:**
  - Non-combustible

- **Building regulations classification:** Class 0

**HEALTH & SAFETY**

**MASTERIMPACT®** is formulated without admixtures of any other mineral fillers. When using power saws or sanders in a confined space, a dust extraction equipment is recommended to control the dust levels. MASTERIMPACT® does not require alkali resistant primers.

It should be noted that the values stated in the follows are average values of the product obtained under normal conditions, and may subject to change without prior notice. Always consult Intumex Asia Pacific for more specific details.

**PHYSICAL PROPERTIES**

- **Density of BPM:**
  - 1300 kg/m³

- **Moisture resistance:**
  - Normal to dry

- **Surface spread of flame (tested to BS 476: Part 7):**
  - Class 1

- **Ignition index:**
  - 0

- **Smoke developed index:**
  - 0

- **Flame spread index:**
  - 0

- **Heat evolved index:**
  - 0

- **Biologically resistant to attack from insects or vermin, including wood boring insects e.g. termites. Also resistant to rot and fungal:**
  - Resistant to dilute chemicals, brine, chlorine etc.
  - 11

- **Resistance to continuous heating:**
  - 150 OCC

- **Thermal expansion:**
  - 6 x 10⁻⁶ m/mOC

- **Thermal conductivity (at 25°C):**
  - 0.05 W/Km

- **Absorption coefficient 1 hour (30°C):**
  - 0.56

- **Thicknes:**
  - 0.96

- **Weight loss:**
  - 10.50%

- **Moisture content:**
  - 10% by weight

- **Value of pH:**
  - 11

- **Thermal shrinkage (at 4 hours/500OC):**
  - 0.09

- **Length/Width:**
  - 0.56%

- **Width/Length:**
  - 0.36%

- **Lengthwise:**
  - 9500 N/m²
  - 9 N/mm²

- **Widthwise:**
  - 7500 N/m²

- **Diameter:**
  - 9 N/mm²

**Your local supplier**

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www.intumex-ap.com
THE PREPARATION OF TOOLS & MATERIALS
FOR MASTERIMPACT® SOLID WALL SYSTEMS

THE MASTERIMPACT® SOLID WALL SYSTEMS – DESIGNED FOR MODERN BUILDING CONSTRUCTION & CONTEMPORARY LIVING

In today’s urban environments, high population growth dictates that the majority of newly constructed residential buildings are of the high rise variety. This necessitates a need for long term, low maintenance buildings based on mass production techniques, with a premium on maximised living space, a reduction of noise from adjacent rooms and apartments, the use of fast track construction methods and a lowering of construction costs all being an important part of the designer’s tool.

The MASTERIMPACT® solid wall system is designed to fill all of the above requirements, providing the designer with greater flexibility in creating living areas to adhere to these. The Intumex Asia Pacific MASTERIMPACT® solid wall system undergoes a stringent range of testing for both its fire and its physical properties. The MASTERIMPACT® solid wall systems offers excellent acoustic properties, combined with superb impact resistance, with high tensile and shear strength properties.

The MASTERIMPACT® solid wall system fulfils the requirements of a heavy duty HD grade wall in accordance with the criteria of BS 5234: Part 2: 1992 and therefore suitable to use in both residential and business environments. As such the systems designed to be easily decorated. Ceramic tiles for kitchens and bathrooms can be applied with ease. Fill and tape joints to provide a surface suitable for painting over, or plaster skim to ensure a smooth clean surface to which can be applied wall coverings of any description.

Generally while working with MASTERIMPACT® solid wall system, hand tools and low speed electric tools are recommended. There are a few additional items of equipment required:

- **MIXER** for preparing the lightweight concrete core.
- **PUMP** for delivering the lightweight concrete into the dry wall.
- **PIPING** for passing the concrete from the pump into the dry wall.
- **ELECTRIC SCREW DRIVER** for fixing the board.

For more precise installation details of MASTERIMPACT® solid wall system, please consult your local Intumex Asia Pacific organisation.
MASTERIMPACT® is a manufactured calcium silicate cellular product which is 100% additive-free. It is manufactured in the 100% - 1200mm variety management system. The board is specifically designed and formulated to absorb or bounce impact and shock resilience is required. It is especially suitable for use in very high density installations. MASTERIMPACT® solid wall systems are designed with fast installation in mind, and to be cost effective to meet all budgets.

MASTERIMPACT® has high thermal insulation, it is classified as a Class O product in accordance with building regulations definitions, and has a Class 1 fire surface spread of flame in accordance with the criteria of BS 4416: Part 7: 1987.

The MASTERIMPACT® solid wall system offers SUPERIOR ACOUSTIC PROPERTIES, and provides a high quality and impact sound insulation product. The mastery of the MASTERIMPACT® solid wall system is for use in heavy residential or business environments.

When compared to concrete or masonry constructions, the MASTERIMPACT® solid wall systems offer a HIGH REDUCED FOOTPRINT in terms of thickness and weight, providing a significant airborne and impact sound insulation advantage when compared to concrete or masonry constructions.

**Physical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (kg/m³)</td>
<td>1360 ± 50</td>
</tr>
<tr>
<td>Water absorption capacity (%)</td>
<td>0.5%</td>
</tr>
<tr>
<td>Heat conductivity (at 4 hours/500ºC)</td>
<td>0.35 W/mK</td>
</tr>
<tr>
<td>Combustibility (tested to BS 476: Part 4)</td>
<td>Non-combustible</td>
</tr>
<tr>
<td>Flame spread index (tested to BS 476: Part 4)</td>
<td>0</td>
</tr>
<tr>
<td>Fire performance (tested to AS 1530: Part 3)</td>
<td>Class 0</td>
</tr>
</tbody>
</table>

**Mechanical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bending strength (powder dry)</td>
<td>12 kN/mm²</td>
</tr>
<tr>
<td>Bending strength (millboard)</td>
<td>9 kN/mm²</td>
</tr>
<tr>
<td>Flexural strength (powder dry)</td>
<td>9500 N/mm²</td>
</tr>
<tr>
<td>Flexural strength (millboard)</td>
<td>7500 N/mm²</td>
</tr>
<tr>
<td>Deflection (under load)</td>
<td>1.60 mm/mm²</td>
</tr>
<tr>
<td>Screw retention strength (tested to BS 4416: Part 17)</td>
<td>1.3 N/mm²</td>
</tr>
</tbody>
</table>

**Health & Safety**

MASTERIMPACT® is formulated without additions of any other inorganic fillers. When using power saws or Sanders in a confined space, a dust extraction equipment is recommended to control the dust levels. MASTERIMPACT® does not require alkali resisting primers.

**Critical Data**

- **Screw retention strength**: 1.3 N/mm²
- **Flexural strength**: 9500 N/mm²
- **Bending strength**: 12 kN/mm²
- **Density**: 1360 kg/m³
- **Water absorption capacity**: 0.5%
- **Heat conductivity**: 0.35 W/mK
- **Screw retention strength**: Class 0
- **Combustibility**: Class 0

**Further Information**

- **Contact**: Intumex Asia Pacific
- **Website**: www.intumex-ap.com
- **Singapore Office**: 10 Science Park Road, #03-14 The Alpha, Singapore 117684
- **Australia Office**: 61 Station Road, Northmead, NSW 2152
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**Additional Information**

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- **Website**: www.intumex-ap.com

July 2004

*Intumex Asia Pacific*
The MasterImpact® Solid Wall Systems – Designed for Modern Building Construction & Contemporary Living

In today’s urban environments, high population growth dictates that the majority of newly constructed residential buildings are of the high-rise variety. This necessitates high density living (in its own particular forms and terms of being conditioned, with a premium on maximising living space, a reduction of noise from adjacent rooms and apartments, the use of fast track construction methods and a lowering of construction costs all being an important part of the designer’s task.

The MasterImpact® solid wall system is designed to fulfil these above requirements, providing the designer with greater flexibility in framing for the adjacent voids. The Intumex Asia Pacific MasterImpact® solid wall system ensures a stringent range of testing for both its fire and its physical performance. The MasterImpact® solid wall systems offers the designer acoustic properties, combined with superb impact resistance, with high tensile and shear strength properties.

The MasterImpact® solid wall system fulfils the requirements as a heavy duty HD grade wall in accordance with the criteria of BS 5234: Part 2: 1992 and therefore suitable to be used as heavy duty wall systems. The MasterImpact® solid wall system has been developed for use in both residential and business environments. All Intumex systems are designed to be easily dismantled. Ceramic tiles for kitchens and bathrooms can be inserted with ease, fill and tape joints to provide a surface suitable for painting over, or slender which ensures a smooth clean surface to which can be applied wall coverings of any description.

The Preparation of Tools & Materials for MasterImpact® Solid Wall Systems

- **Mixing** for preparing the lightweight concrete core.
- **Piping** for passing the concrete from the pump into the dry wall.
- **Saw** for cutting the board. A jigsaw for example is good for cutting the board into various shapes.
- **Electric screwdriver** for fixing the board.
- **Pipe for delivering the lightweight concrete into the dry wall.**

The MasterImpact® Solid Wall Systems: Step by Step

1. Install standard steel stud partition framing, such as vertical, sixteen centimetres, vertical and 2440mm centres horizontal.
2. Fix the MasterImpact® board frame only, install all trims near joints and edges.
3. Fix the MasterImpact® board to the front face, drill holes between each vertical stud, and at nominal 1220mm height centres.
4. Insert the filler hose and begin to pump the cement mixture into the cavity, ensuring all apertures are fully filled.
5. Leave to dry for 48 hours, then apply joint filler where appropriate to fill holes, gaps between boards etc.
6. Where a superior finish is required, apply a skin coat of gypsum plaster over the whole construction.
**The Preparation of Tools & Materials for MASTERIMPACT® Solid Wall Systems**

- **Mixer** for preparing the lightweight concrete core.
- **Pumping** for delivering the lightweight concrete into the drywall.
- **Pipe** for passing the concrete from the pump into the wall. A flexible type is more flexible and easier to work with.
- **Saw** for cutting the board. A plunge type is ideal for cutting the board into various shapes.
- **Electric Screwdriver** for fixing the board.

**For More Precise Installation Details of MASTERIMPACT® Solid Wall Systems**

The MASTERIMPACT® solid wall system fulfills the requirement for a heavy-duty 186-grade wall in accordance with the criteria of BS 5234: Parts 1 & 2: 1992 and is therefore suitable to serve as a partition to heavy industrial environments. The MASTERIMPACT® solid wall system has been developed for use in both residential and business environments. On this basis the system is designed to meet the requirements of being resistant to impact forces, providing a surface suitable for painting, covering or wall coverings of any description. The MASTERIMPACT® solid wall system is designed to fulfill the requirements of being resistant to impact forces, providing a surface suitable for painting, covering or wall coverings of any description.
**WHAT ARE THE BENEFITS OF USING THE MASTERIMPACT® SOLID WALL SYSTEMS?**

**MASTERIMPACT®** is a well-researched calcium silicate block product which is 100% substituable for concrete in accordance with the building regulations for solid wall systems. The board is specifically designed for use in internal or external walls in regions where high impact or freeze/thaw resistance is required. It is equally suitable for use in walls where it is specified as a decorative feature. MASTERIMPACT® solid wall systems are designed with fast installation in mind, and to be cost effective for cost conscious developers.

**MASTERIMPACT®** is a stiff, strong, and durable block, it is classified as Class 0 in accordance with building regulations for solid wall systems, and tested to BS 476: Part 11, the surface spread of flame in accordance with the criteria of BS 4-11: Part 7: 1987.

The MASTERIMPACT® solid wall systems provide a FIRE RESISTANCE PERFORMANCE of up to 4 hours in terms of thickness and structure as an internal wall or partition, tested as internal insulation as a wall or partition, tested as internal insulation as a solid wall system. It is designed for use in solid wall applications where high impact resistance is required. It is especially suitable for use in wet conditions, and provides a significant airborne and impact sound insulation properties. The ‘ fixes’ make the MASTERIMPACT® solid wall systems ideal for use in residential or business environments.

**NOT ONLY FIRE RESISTANT, MASTERIMPACT® IS WATER PROOF as well. This benefit has the benefit of enhancing the building’s process of moist curing. By the correct mix ratio of the correct mixture forming the core, allowing this system to be used in wet areas without needing to be covered.**

**MASTERIMPACT®** has been subject to, and passed test for water tightness, in accordance with the criteria of BS 4624: 1981 and BS 4-45: Part 2: 2010.

**MASTERIMPACT®** solid wall systems are capable of WITHSTANDING THE WEIGHT OF IMPACT LOADS, such as hanging cupboards, heavy fittings e.g. washbasins, ensuring this system entirely suitable for use in bathrooms or basins etc.

The two layer and composite core design of the system continues to produce a wall which offers EXCELLENT THERMAL INSULATION, in both hot and cold climates.

The installation of the MASTERIMPACT® solid wall systems FLEXES TO INSTALL, and is suitable for traditional methods of using concrete or masonry constructions.

While working with concrete or masonry constructs, the MASTERIMPACT® solid wall systems offer a 45% CH REDUCED FOOTPRINT in terms of thickness and structure which once again allows a greater degree of flexibility to the building design team.

**MASTERIMPACT®** is supplied with a recessed edge for flush jointing and is available in standard nominal size of 6mm/9mm/12mm thick x 2440mm long x 1220mm wide. A maximum size of 1230mm wide x 3130mm long is available upon request.

It should be noted that the values stated in the tables above are average values of the MASTERIMPACT® product obtained under normal conditions, and may subject to change without prior notice. Always consult Intumex Asia Pacific for more specific details.

**MECHANICAL PROPERTIES**

- **Bending strength (dry)**
  - Lengthwise: 12 N/mm²
  - Widthwise: 9 N/mm²

- **Bending strength (oven dry)**
  - Lengthwise: 9500 N/mm²
  - Widthwise: 7500 N/mm²

- **Deflection (oven dry)**
  - Lengthwise: 1.30 mm/m

- **Screw retention strength** (self-tapping screws 5 x 32mm) 980 N (average)

**PHYSICAL PROPERTIES**

- **Density (at EMC)**
  - Nominal 1300 kg/m³

- **Moisture content (at EMC)**
  - Nominal 10% by weight

- **Thermal conductivity**
  - At 20°C/30°C: 0.24 W/m K

- **Thermal expansion**
  - Lengthwise: 6 x 10⁻⁶ m/m

- **Water absorption**
  - 30% by weight

- **Durability**
  - Long life, and will not promote expansion.

- **Density**
  - Nominal 1300 kg/m³

- **Biologically resistant**
  - To attack from insects or vermin, including wood boring insects e.g. termites. Also resistant to rot and fungal decay.

- **Compressive strength**
  - 130 N/mm²

- **Flexibility**
  - Linear: 12 %

**FIRE RESISTANCE**

- **Corrosivity Index**
  - Non-corrosive

- **Building regulations classification**
  - Class C

- **Fire performance (refer to BS 476: Part 4)**
  - Gibson Index: 0
  - Flame spread index: 0
  - Heat evolved index: 0

- **Ignitability**
  - Non-combustible

**HEALTH & SAFETY**

**MASTERIMPACT®** is formulated without additions of any other inorganic fillers. When using power saws or grinders in a confined space, a dust extraction system is recommended to control the dust levels. **MASTERIMPACT®** is not hazardous. Please consult Intumex Asia Pacific for more details on health and safety data sheets.

**THERMAL INSULATION**

- **Combustibility Index**
  - Class 1

**MASTERIMPACT®** is a calcium silicate block product which is 100% substituable for concrete in accordance with the building regulations for solid wall systems. The board is specifically designed for use in internal or external walls in regions where high impact or freeze/thaw resistance is required. It is equally suitable for use in walls where it is specified as a decorative feature. MASTERIMPACT® solid wall systems are designed with fast installation in mind, and to be cost effective for cost conscious developers.

**MASTERIMPACT®** is a stiff, strong, and durable block, it is classified as Class 0 in accordance with building regulations for solid wall systems, and tested to BS 476: Part 11, the surface spread of flame in accordance with the criteria of BS 4-11: Part 7: 1987.

The MASTERIMPACT® solid wall systems provide a FIRE RESISTANCE PERFORMANCE of up to 4 hours in terms of thickness and structure as an internal wall or partition, tested as internal insulation as a wall or partition, tested as internal insulation as a solid wall system. It is designed for use in solid wall applications where high impact resistance is required. It is especially suitable for use in wet conditions, and provides a significant airborne and impact sound insulation properties. The ‘fixes’ make the MASTERIMPACT® solid wall systems ideal for use in residential or business environments.