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Foreword (by Director CBMA)

The technologies from China presented here are selected by International Center for Materials Technology Promotion (ICM)/China Building Materials Academy (CBMA). These technologies are specially chosen for low-cost housing in the developing countries. Low-cost housing technology is now keenly needed in most of these countries, especially in African, Latin American, Asian regions and post-disaster areas. I am sure that technologies from China, the largest developing countries, are the most suitable for these countries.

ICM is one of the International Technology Centers established by UNIDO with the support of Chinese government, with its premises in CBMA. During the past half century, CBMA has made great contributions to the scientific and technological advancement of Chinese building materials industry. CBMA has also actively involved in most of the key engineering projects in China like the Green Olympic 2008 construction projects, Three Gorges Dam project, etc. I hope this technical catalogue can be of great help for post-disaster rehabilitation and house building in the developing countries.

I would like to acknowledge the contribution of Mr. T. N. Gupta, Former Executive Director of Building Materials & Technology Promotion Council (BMTPC), Ministry of Urban Development & Poverty Alleviation of India, who made his keen efforts to guide the preparation of this catalogue.

Yao Yan
Professor
President of CBMA
Director of ICM
Beijing, China
April, 2005
Cement plant (capacity from 300tpd to 12000tpd)

ICM can undertake the design and technical service for various types of cement production lines, from the most advanced large scale - 12000t/d NSP line to small scale - 300t/d line.

Take 300t/d line as an example.

Use
For production of OPC or special cements

Production Capacity
Clinker output: 300t/day
Output: 12.5t clinker/hour or 14t cement/hour

Size of product
32.5# & 42.5# Portland cement (ISO679: 1989)

Properties of product

<table>
<thead>
<tr>
<th></th>
<th>Compressive strength (MPa)</th>
<th>Flexural strength (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3d</td>
<td>28d</td>
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<tr>
<td>32.5OPC</td>
<td>11.0</td>
<td>32.5 OPC: 3.5</td>
</tr>
<tr>
<td>42.5 OPC</td>
<td>17.0</td>
<td>42.5 OPC: 6.5</td>
</tr>
</tbody>
</table>

Manufacturing process
Dry process for manufacturing cement. One ø3 × 48m rotary kiln with preheaters.

Land requirement
- Road: 8000m²
- Covered area: 8000m²

Raw Material
- Limestone,
- Clay,
- Ironstone,
- Gypsum.

Fuel: Coal or Petroleum.
Power
- Heat energy consumption: 4600kJ/kg clinker (1100 kcal/kg clinker)
- Electricity consumption: 125kW • h/t clinker
- Three phase
- Voltage: 380V

Manpower
Skilled (Nos.): 150
Unskilled (Nos.): 80

Main manufacturing workshops

<table>
<thead>
<tr>
<th>No.</th>
<th>Workshop</th>
<th>hrs/day</th>
<th>days/week</th>
<th>hrs/week</th>
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<td>1</td>
<td>Crusher department</td>
<td>8</td>
<td>6</td>
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<td>2</td>
<td>Drying department</td>
<td>8</td>
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<td>48</td>
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<tr>
<td>3</td>
<td>Raw mix preparation department</td>
<td>22</td>
<td>6</td>
<td>132</td>
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<td>4</td>
<td>Clinker sintering department</td>
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<td>7</td>
<td>168</td>
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<tr>
<td>5</td>
<td>Cement making department</td>
<td>22</td>
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<tr>
<td>6</td>
<td>Cement package department</td>
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<td>6</td>
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Project cost

<table>
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<tr>
<td>Essential Spareparts &amp; tools</td>
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<td>Electricity transmission outside the plant</td>
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<tr>
<td>Working Capital (one month)</td>
<td>US$ 1,500,000</td>
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</table>
Lime-Sand Bricks

Use
For load bearing walls of low-rise buildings;
A good substitute for clay brick.

Production Capacity
30 million pieces of brick per year

Size of product
240×115×53mm

Properties of product
Compressive strength (MPa): 10 15 20 25
Flexural strength (MPa): 2.5 3.3 4.0 5.0

Main equipment
- Crushing machine,
- Ball mill, mixer,
- Brick forming machine,
- High pressure steam vessel,
- Boiler.

Land requirement
- Road: 10000m²
- Covered area: 800m²

Raw Material: Lime, sand.

Power
- KW: 40
- Three phase
- Voltage: 380V

Manpower: Skilled (Nos.): 3
Unskilled (Nos.): 30
## Project Cost

<table>
<thead>
<tr>
<th></th>
<th>US$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td><strong>410,000</strong></td>
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<tr>
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<tr>
<td>Essential Spareparts &amp; tools:</td>
<td>10,000</td>
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<tr>
<td>Metering equipment and conveying equipment, etc.</td>
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<tr>
<td>Civil Construction</td>
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<tr>
<td>Lime silo, boiler house, lime reaction silo, etc.</td>
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<tr>
<td>Design &amp; installation</td>
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<tr>
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<tr>
<td>Working Capital (one month)</td>
<td>40,000</td>
</tr>
</tbody>
</table>
Cement-waste slag brick

Use
For load bearing walls of low-rise buildings.

Features
A lot of waste slag can be recycled.
Either natural curing or steam curing for bricks.

Production Capacity
15 million pieces/year

Size of product
240×115×53mm

Properties of product
- Compressive strength: 10-30MPa
- Flexural strength: 2.6kg-5.0MPa
- Water absorption: 12.2%-13%

Main equipment
- Mixer,
- Brick forming machine,
- Belt conveyor,
- Metering equipment.

Land requirement
Open: 10000m² Workshop: 100 -200m²
Covered: 200m²

Raw Material
Waste slag (80%): fly ash, coal gangue, slag, etc.
Aggregate: stone powder or river sand
Bonding agent (20%): cement or gypsum.

Composition of each raw material for the product
Waste slag: fly ash, coal gangue, slag, etc.
Aggregate: stone powder or river sand
Bonding agent: cement.
Power
• KW: 35
• Three phase
• Voltage: 380V

Manpower
Skilled (Nos.): 1
Unskilled (Nos.): 8

Project Cost

<table>
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<tr>
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<td>Working Capital (one month)</td>
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</table>
Concrete hollow block

Use
For walls

Features
- Wide source of raw materials
- Simple manufacturing process
- High construction speed
- The same process for Fly ash concrete block
- The same process for Lightweight concrete hollow block

Size of product
390 × 190 × 190mm

Properties of product
Compressive strength (MPa): 3.5, 5.0, 7.5, 10.0, 15.0, 20.0;

Raw Material
Concrete Hollow Block: Cement, sand, aggregates
Fly ash concrete block: Cement, fly ash, aggregates
Lightweight concrete hollow block: Cement, lightweight aggregate, such as, fly ash, ceramisite, pumice, furnace slag, cinder, pearlite and other waste slags.

I Simple production line (Movable block forming machine)

Production Capacity
4 pieces/60s, 15000m³/year (2 shifts, 8 hours per shift)

Main equipment
Mixer, Movable block forming machine (CXJ-A)

Land requirement
Open: 3000m²
Covered: 100m² (shed)
Power
KW: 10
Three phase
Voltage: 380V

Manpower
Skilled (Nos.): 1
Unskilled (Nos.): 4

<table>
<thead>
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<th>Project Cost</th>
<th>Cost</th>
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<tr>
<td>Working Capital (one month)</td>
<td>US$ 30,000</td>
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</tbody>
</table>

II Semi-automatic production line
(Stationary block forming machine)

Production Capacity
4 pieces/25s, 35000m³/year
(2 shifts, 8 hours per shift)

Main equipment
Mixer, Stationary block forming machine (QMJ4 – 25), Belt conveyer.

Land requirement
Open: 5000m²
Covered: 100m² (shed)

Power
KW: 50
Three phase
Voltage: 380 V

Manpower
Skilled (Nos.): 1
Unskilled (Nos.): 7
### Project Cost

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<tr>
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<tbody>
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<td>Design &amp; installation</td>
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<tr>
<td>Working Capital (one month)</td>
<td>70,000</td>
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</table>

### III Fully automatic production line

#### Production Capacity
9 pieces/15s, 100,000m³/year (2 shifts, 8 hours per shift)

#### Main equipment
Whole set of automatic production line, including computer controlled system, metering system, mixing system, conveying system, block forming system and standard moulds, etc.

#### Land requirement
- Open: 10000m²
- Covered: 1000m² (shed)

#### Raw Material
- Concrete Hollow Block: Cement, sand, aggregates
- Fly ash concrete block: Cement, fly ash, aggregates
- Lightweight concrete hollow block: Cement, lightweight aggregate, such as, fly ash, ceramisite, pumice, furnace slag, cinder, pearlite and other waste slags.

#### Power
- KW: 50
- Three phase
- Voltage: 380

#### Manpower
- Skilled (Nos.): 1
- Unskilled (Nos.): 11

---

*Environment Friendly Building Material Technologies for Low Cost Housing*
<table>
<thead>
<tr>
<th>Total</th>
<th>US$</th>
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<tr>
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<tr>
<td>Other expenses</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,015,000</strong></td>
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</table>
Decorative Concrete Block

Use
For decoration of exterior walls

Features
Combination of structural function and decorative function;

Production Capacity
2 pieces/15s, 1,000,000 pieces/year

Size of product
Standard size: 390 × 190 × 190mm
Facing block: Maximal surface area 590 × 290mm (thickness upon demand)

Properties of product
Compressive strength (MPa):
Hollow block: 7.5, 10.0, 15.0, 20.0;
Solid block: 10.0, 15.0, 20.0, 25.0, 30.0;
Flexural strength of Facing block: >4.0

Main equipment
- Mixer,
- Block forming machine,
- Metering system,
- Conveyor,
- Splitting machine.

Land requirement:
Open: 3000m²
Covered: 600m²

Raw Material
Cement, sand, stone, admixture, pigment

Power
KW: 60
Three phase
Voltage: 380 V
**Manpower**  
Skilled (Nos.): 1  
Unskilled (Nos.): 20

### Project cost

<table>
<thead>
<tr>
<th>Item</th>
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<tr>
<td>Other expenses</td>
<td>1,000</td>
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<tr>
<td>Working Capital (one month)</td>
<td>70,000</td>
</tr>
</tbody>
</table>

*Decorative Concrete Block*
Lightweight Concrete Hollow (3E) Panel

**Use**
3E panel is for walling system of steel reinforced concrete - lightweight panel system.

**Features**
- 3E panel (Ecological, Extruding Process, Economical)
- Specially designed for low-cost house.
- 3E house (Easy, Energy-saving, Ensure) can be installed and rapidly constructed with 3E panels.
- Excellent shock resistance: post-casted stem, panel and ring beam form an integrated structure.

**Production Capacity**
150,000 m²/year (per shift of 8 hours)

**Size of product**
2500-3000 × 600 × 90mm
(thickness is optional upon demand: 60 to 120mm)

**Properties of product**
- Air-dried density (kg/m²): 45-58
- Flexural failure load (N): 2500-3000
- Compressive strength (MPa): 6-12

**Main equipment**
- Panel extruding machine,
- Compulsory mixer,
- Cutting machine,
- Fiber cutting and spraying machine,
- Grinding machine,
- Feeder, etc.

**Land requirement**
- Open: 5000-7000 m²
- Covered: 100-200 m²
  (office and storehouse),
  500-800 m² (workshop)
Raw Material
Cement, Fly ash (not necessarily), glass fiber or steel wire, aggregate (optional: sand, stone, blast-furnace slag, pearlite, ceramisite, pumice, and other slags).

Power
KW: 20
Three phase
Voltage: 380V

Manpower
Skilled (Nos.): 1
Unskilled (Nos.): 8-12

Project Cost

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<td>US$ 10,000</td>
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<tr>
<td>Working Capital(one month)</td>
<td>US$ 60,000</td>
</tr>
</tbody>
</table>
Foam Fly Ash - Concrete Panel

Use
Foam fly ash - concrete panel for Partition wall, EPS sandwiched external wall panel, Reinforced hollow floor panel, EPS sandwiched roof panel

Features
- Easily worked and rapid on-site assembly
- Light weight
- Fire resistant
- Energy efficient: 80%
- Excellent acoustic performance
- Designed for inner comfort: cooler in summer, warmer in winter

Production Capacity
Annual production of 300,000m²

Size of product
Product type (all size are available according to requirement):
ASA partition wall panel
Size: 2700～2540×600×60～50mm or 3000～2540×600×90～120mm
ASA EPS sandwiched external wall panel: 2700～2540×600×60～120mm
ASA reinforced hollow floor panel: 4300～2000×600×120mm
ASA EPS sandwiched roof panel: 3000～2000×600×90～120mm

Main equipment
- Raw materials preparing and conveying system
- Foaming and casting system
- Curing system
- Computer-controlled System
- Testing system, etc.

Land requirement:
Open: 2000-5000m²
Covered: 3200m$^2$
(Workshop, warehouse, office, laboratory)

**Raw Material**
Fly ash (50-70%), cement, forming agent, reinforced materials

**Power**
KW: 50
Three phase
Voltage: 380 V

**Manpower**
Skilled (Nos.): 10
Unskilled (Nos.): 50

<table>
<thead>
<tr>
<th>PROJECT COST</th>
<th>US$ 1,250,000</th>
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<tr>
<td>Workshop, warehouse, office, laboratory</td>
<td>US$ 100,000</td>
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<tr>
<td>Design &amp; installation</td>
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<tr>
<td>Working Capital</td>
<td></td>
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<tr>
<td>(one month)</td>
<td>US$ 200,000</td>
</tr>
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</table>

Foam fly ash - concrete panel
Concrete Hooking panel

**Use**
This panel can be used for wall of low-rise and high-rise buildings

**Features**
- The wall is assembled by concrete hooking panel and concrete or steel hook.
- No auxiliary materials are needed for assembling. No need for bonding or anchoring for the panel.
- The house built with hooking panel is quake-proof and fireproof
- The machine can produce many kinds of panels
- Low-cost: US$40/m² building area

**Production Capacity**
90,000m² (per shift 7 hours)

**Size of product**
Hooking panel: 1200mm×165mm×30mm
Inside panel: 2700mm×600mm×90mm

**Properties of product**
- Weight: ≤15kg/m
- Flexural strength: ≥600N
- Good impact resistance
- Water absorption: 15%

**Main equipment**
- Panel extruding machine,
- Cutting machine,
- Rolling screen,
- Crushing machine,
- Mixer.
**Land requirement**
- Open: 4000m²
- Covered: 80mt. x 12mt. (shed)

**Raw Material**
Cement, sand, waste slag, glass fiber (for non-bearing wall) or steel wire (bearing wall)

**Power**
- KW: 20KW
  - Three phase
  - Voltage: 380

**Manpower 10**
- Skilled (Nos.): 1
- Unskilled (Nos.): 9

**Project cost:**

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<tr>
<td>Working Capital (one month)</td>
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</tbody>
</table>

**Example of a 100m² house with hooking panel:**

a) Manpower: 8 workers

b) Construction period: 15 days

c) Building cost: US$40/m²
   - Basement: US$4/m²
   - Walling: US$20/m²
   - Roofing: US$8/m²
   - Door & window: US$8/m²

d) Total cost: US$4000
Glass-fiber Reinforced Concrete (GRC) panel

Use
Suitable for load bearing wall of 1 to 2 stories buildings and non-load bearing wall of high-rise buildings.

Features
- Easy and quick construction: all the building materials needed for a 280m² house can be transported by a truck; 8 workers can complete the house in 2 weeks;
- Light weight: 35-50kg/m²;
- High shock resistance;
- Good heat insulation;
- High durability;
- Low-cost house: building cost is only US$60/m².

Production Capacity
150,000m²/year (per shift of 8 hours)

Size of product
2400-3000 × 900-12000 × 110-150mm

Properties of product

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
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<td>Weight</td>
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<tr>
<td>Heat conductivity (thickness 110mm)</td>
<td>≤ 0.36W/m²·K</td>
</tr>
<tr>
<td>Index of acoustic insulation (thickness 110mm)</td>
<td>≥ 40db</td>
</tr>
<tr>
<td>Axial load limit (length 2400mm)</td>
<td>27.8kN/m²</td>
</tr>
<tr>
<td>Transverse load limit (length 2400mm)</td>
<td>2.0kN/m²</td>
</tr>
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</table>

Main equipment
Panel forming machine, mixer and accessory equipment)

Land requirement
- Open: 4000-6000m²
- Covered: 100-200m² (office and storehouse), 500-800m² (workshop)
Raw Material
Cement, EPS panel, reinforced materials, sand, blast-furnace slag, pearlite, ceramisite, pumice, and other slags.

Power
KW: 25KW
Three phase
Voltage: 380

Manpower
Skilled (Nos.): 1
Unskilled (Nos.): 9

Project cost:

<table>
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<tr>
<th>Total</th>
<th>US$155,000</th>
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<tr>
<td>Working Capital (one month)</td>
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Glass fiber reinforced concrete
Straw panel

Use
Straw panel is used for wall of low-rise buildings and partition wall of high-rise buildings.

Features
- Green Building Material - 70% straw
- Low-cost: 35%-50% of gypsum product
  10%-20% of wood product
- Lightweight – 33kg/m²
- Non-radiative
- Waterproof, Fireproof, Crack resistant

Raw Material
Straw (wheat straw, rice straw, maize stalk), sawdust, maize stalk, sawdust, sugarcane pole, husk, etc.
Bonding and anti-burning agent
Reinforced material: mainly glass fiber

Size of product
2400mm×300mm×100mm

Properties of product
- Dry Shrinkage≤0.8mm/m
- Refractory Limit 188 minutes
- Sound Insulation≥40dB
- Water Absorption 22%

I Hand made production line

Production Capacity
20,000m²

Main equipment
Mixer, 50 sets of forming moulds

Land requirement
- Open: 1000m²
- Covered: 100m² (shed)
Power: KW: 5KW
Three phase
Voltage: 380

Manpower: Skilled (Nos.): 0
Unskilled (Nos.): 10

Project cost:

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<tr>
<td>Working Capital (one month)</td>
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</table>

II Semi-automatic production line

Production Capacity
200,000m²

Main equipment
Panel forming machine, crushing machine, mixer, moulds.

Land requirement
Open: 3000m²
Covered: 300m² (shed)

Power:
KW: 5
Three phase
Voltage: 380 V

Manpower:
Skilled (Nos.): 2
Unskilled (Nos.): 60

Project cost:

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**S Panel**

(Steel wire-EPS composite panel)

**Use**

S Panel system is a composite construction system. It is used for load bearing walls for low-rise buildings and non-load bearing walls for high-rise buildings, also for floor board and roofing board; It consists of S Panels - three-dimensional welded wire mesh and a built-in expanded polystyrene insulation core. The panels are erected over steel reinforcing bars embedded in a concrete foundation, then fastened to one another with wire - splice mesh. Concrete is sprayed to both sides of the panels to the desired thickness. The result is a homogenous structure with excellent thermal and acoustic properties.

**Features**

- Fast and simple erection, creating a monolithic structure.
- Cost effective way of creating a quality, plaster finished structure.
- Light weight - only 3.9 kg per m², 110 kg with cement mortar of 30 mm thick on both sides, easy to handle and suitable for area with soft foundation.
- High energy efficient system - Efficient thermal barrier, thermal resistance (50 mm in thickness) is 0.825 m².k/w.
- Excellent Sound Insulation - STC rating up to 52.6 dBA.
- Superior fire resistance - tested to 2 hours fire rating.
- Earthquake resistance - As a monolithic structural element with superior strength and ductility; it is ideal solution for high seismic areas. Also hurricane and typhoon proof design, even at the highest wind loads.
- Long life, high durability, low maintenance, strong and modern.
- Healthy and secure - Insect, termite, mildew and fungi resistance.
- Greater design flexibility, easily to be adopted to curved/arched application.

S Panel System is stronger than rock and more versatile than timber.
Production Capacity
400,000m² (per annum)

Manufacturing Equipments and Production Flowchart

Size of products
Can be fabricated in different sizes.

Properties of product
- Light weight - only 3.9 kg per m², 110 kg with cement mortar of 30 mm thick on both sides, easy to handle and suitable for area with soft foundation.
- High energy efficient system - Efficient thermal barrier, thermal resistance (50 mm in thickness) is 0.825 m².k/w.
- Excellent Sound Insulation - STC rating up to 52.6 dBA.
- Superior fire resistance - tested to 2 hours fire rating.

Main equipment
- EPS Foaming System,
- Welding and Forming System,
- Mesh Welding System,
- Checking System,
- Accessory Making System,
- Vapor System,
- Compressed Air System,
- Engineer Electrical System

Land requirement
- Open: 3000-5000m²
- Covered: 3000m²

Raw Material
Steel wires: Ø2.0-2.2mm - Annual demand: 1,000tons
EPS resin: density 15-20kg/m³ - Annual demand: 320tons

Power:
- KW: 150
  - Three phase
  - Voltage: 380 V

Manpower:
- Skilled (Nos.): 2
- Unskilled (Nos.): 36

Project cost

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<td>Working Capital (one month)</td>
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Colored Cement Tile for Roofing

Use
Colored cement tile is an ideal roofing materials used for residential and industrial buildings.

Features
- High flexural strength
- Low water absorption
- Waterproof and good impermeability durable

Production Capacity
4000 pieces per 8 hour shift, 1,000,000 pieces per year

Size of product
420mm×330mm×12mm

Properties of product
- Flexural strength \( \geq 90 \text{kg} \)
- Good impermeability
- Long service life

Main equipment
- Mortar mixer,
- Belt conveyer,
- Extruding machine,
- Coloring machine,
- Tile bracket,
- Steel tile mould.

Land requirement:
- Open: 2000m²
- Covered: 200m²
**Raw Material**
Cement, sand, pigment

**Power**
- KW: 22
- Three phase
- Voltage: 380 V

**Manpower**
- Skilled (Nos.): 1
- Unskilled (Nos.): 10

**Project Cost:**

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<td>Working Capital (one month)</td>
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Concrete Paving Block

**Use**
For road paving.

**Features**
- Flexible design of shape and size;
- Good abrasion resistance
- High compressive strength

**Size of product**
Size: 250×250×40mm~50mm
300×300×40mm~50mm
Compressive strength ≥ 25.0Mpa
Abrasion resistance ≥ 35.0mm

**Properties of product**
- Compressive strength: ≥ 25.0MPa
- Flexural strength: ≥ 3.5MPa
- Abrasive resistance: ≥ 35.0mm
- Water absorption: 9.0%

**Raw Material**
Cement, fly ash, sand, stone, etc

**I Simple production line**

**Production Capacity**
4 pieces/40-60s, 40,000m²/year (300 day and one 8 hour shift)

**Main equipment**
- Mixer,
- Paving block forming machine,
- Crushing machine,
- Moulds
**Land requirement**
- Open: 2000m²
- Covered: 300m² (shed)

**Power**
- KW: 10
- Three phase
- Voltage: 380 V

**Manpower** 10 (per shift)
- Skilled (Nos.): 1
- Unskilled (Nos.): 9

**Project Cost:**

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**II Semi-automatic production line**

**Production Capacity**
6 pieces/9-12s, 60,000m²/year (300 day and one 8 hour shift)

**Main equipment**
- Mixer,
- Paving block automatic forming machine
- Crushing machine
- Moulds

**Land requirement**
- Open: 3000m²
- Covered: 300m² (shed)
Power
- KW: 15
- Three phase
- Voltage: 380 V

Manpower 10 (per shift)
- Skilled (Nos.): 1
- Unskilled (Nos.): 6

Project Cost:

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Hollow Gypsum Board & Blocks

Use
For interior wall.

Features
- Lightweight, fireproof and heat – insulative;
- Easy & quick construction.

Production Capacity
150,000 M²/year

Size of product
666mm×500mm ×60mm~160mm

Properties of product
- Weight < 45Kg/M²
- Bend strength > 500 N

Main equipment
Molding machine, mixer, dry room, transport system

Land requirement
- Open: 5000 M²
- Covered: 3000 M²

Raw Material
Building gypsum, supplementary materials, such as, lightweight aggregate, fly ash, filler, etc.

Power:
- KW: 500
- Three phase
- Voltage: 380

Manpower:
- Skilled (Nos.): 5~8
- Unskilled (Nos.): 15~20
Project Cost:

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Hollow gypsum board & blocks
Wall plaster

Use
Plaster for interior wall

Features
- Good workability and micro-expansion;
- Easy & quick construction;
- Good adhesion with basement;
- Lightweight, fireproof and heat - insulative

Production Capacity
30,000～50,000 tons per year

Packing sizes
40Kg/bag

Properties of product
Strength > 4.0 MPa, setting time > 60 min

Main equipment
Sintering equipment, grinding equipment, mixing equipment

Land requirement
Covered: 2000 M²

Raw Material
Building gypsum, supplementary materials, such as, lightweight aggregate, fly ash, filler, etc.

Power:  KW: 100 KW
- Three phase
- Voltage: 380

Manpower
Skilled (Nos.): 3~5
- Unskilled (Nos.): 10~15
**Project Cost:**

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<td>Working Capital (one month)</td>
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Paint for interior & exterior wall

Use
Decoration for interior and exterior wall.

Features
- Easy construction
- Convenient maintenance
- Wide color option upon demand

Production Capacity
2-10t/d, 600-3000t/y

Packing size
25-100Kg/bucket

Properties of product
GB/T 9756 (for interior), GB/T 9755 (for exterior)

Main equipment
High-speed dispersing machine,
Dispersing kettle,
Grinding equipment.

Land requirement
Covered: 200~1000 M²

Raw Material
Polymer emulsion, titanium white, filler, additive.

Power
KW: 100
Three phase
Voltage: 380

Manpower
Skilled (Nos.): 4~6 persons
Unskilled (Nos.): 10~15 persons
### Project cost

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Paint for interior & exterior wall
About China Building Materials Academy (CBMA)

CBMA is the largest comprehensive research institute in the fields of building materials in China. CBMA has established academic and trade relations with organizations of more than 50 countries. Its technologies and products have been widely recognized and adopted in China and exported to more than 30 countries and regions.

About International Center for Materials Technology Promotion (ICM)

ICM was established by UNIDO with the support of Chinese government, with its headquarters in Beijing. The CBMA is the parenting institution for ICM. The mission of ICM is to facilitate technology transfer and diffusion processes of new materials technologies in the developing countries.

For further details, please contact:

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