**Caution**

- Do not use for any building's structure or other purposes. The installation shall follow the Installation Manual and use only the standard equipments made by producer.
- Do not eat or avoid the smelling.

**Attention to avoid danger**

- The Products of SCG SmartBoard are designed, while the operation methods are specified to suit with the working condition in Thailand only. Any application outside Thailand is considered to be direct responsibility of the designer, construction supervisor, and installer.

**Recommendation for Safety Operation**

- SCG SmartBoard has composed by the silicate. Cutting, grinding, drilling, or polishing of the product shall result in flying dust. If any person accidentally eat or inhale in a considerable amount or in long period it shall harm the respiratory system or body of that person.
- The cutting, grinding, drilling, or polishing of the product shall carried out in good ventilated area, and avoid to use the machine for cutting, grinding, drilling, or polishing of the product which resulting in high amount of dust.
- Wear the Personal Protection Equipment which is in accordance to the standards, such as dust protection mask, safety goggle, clothes, glove, shoe, etc.
- Not allow any person who does not wear the Personal Protection Equipment which is in accordance to the standards, or any person who is not concerning with the work into working area in order to avoid any possible accident or injury.
- Lifting or transportation of products shall be carried out with special attention. Do not bend down or twist oneself during lifting, and avoid working continuously in long period in order to avoid injury and fatigue.
- The person who has to perform lifting must carry out by lowering oneself and hold the products firmly, then apply leg power to lift.
- Cleaning of the working area after complete the cutting, grinding, drilling, or polishing of the product shall be carried out by vacuum machine, then the dust container shall be sealed completely, or cleaned by water. Do not sweep because this can cause spreading of dust.
- Separate and collect the debris occurred from installation, reparation, dismantle of products with special attention, and eradicate with appropriate methods which specified by government service.
- Clean oneself body with clean water after complete the cutting, grinding, drilling, or polishing of the product.

**First Aid**

- If the dust or any material debris accidentally entered the eye, do not scrub or crush. Clean with clean water several times, and consult the physician immediately.

**Verify that all methods are following the most update of Installation Manual of Products**

Installation Manual of Products is always updated. The designer, construction supervisor, and installer shall verify that all methods being used are following the most update of Installation Manual of Products. They can confirm by the website: www.siamfibrecement.com
SCG SmartBoard is a new generation fiber-cement material made from Elephant Portland Cement, Silica, and Special cellulose. It is designed for ceiling, wall, and flooring.

### Special Properties

**Firm**
- High impact strength
- Made of Elephant Portland Cement, Silica, and special cellulose without asbestos, which will not easily break even after being struck with a hammer.

**Water-Resistant and Non-decy**
- Long-lasting resistance to water, rain, and sunlight without losing its color and appearance.

**Resistant to Termites**
- SCS SmartBoard is termite-resistant because it is made from Elephant Portland Cement and special cellulose. It is safe to install directly on the concrete slab or keep it away from the root gap. The panel has a thickness of 1.5 mm, which is two times thicker than the traditional brick wall.

**Flexibility for all design**
- No need for wording on muscular, with an odd thickness of 0.5 mm, which will not easily break even after being struck with a hammer.

**Light weight, easy to install and customize your design**
- SCG SmartBoard is made from Elephant Portland Cement, Silica, and special cellulose without asbestos, which are lighter than traditional brick walls. SCG SmartBoard is a new generation fiber-cement material which produced using Firm & Flex Technology that gives flexibility without losing durability.

**Good heat resistant for comfort homes**
- SCG SmartBoard has less than two times heat conductivity rate than asbestos fiber-cement (ASTM C117 Standard) that reduces heat transfer from the under roof gap. Reduces in-house temperature and saves energy.

### Product series and dimension

#### SCG SmartBoard

<table>
<thead>
<tr>
<th>Thickness (mm)</th>
<th>Width x Length (cm)</th>
<th>Series</th>
<th>Weight (kg/m²)</th>
<th>Effective Area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5</td>
<td>60 x 240</td>
<td>Square Edge</td>
<td>7.6</td>
<td>0.70</td>
</tr>
<tr>
<td>120 x 120</td>
<td></td>
<td>Tapered Edge</td>
<td>7.6</td>
<td>0.70</td>
</tr>
<tr>
<td>4</td>
<td>60 x 240</td>
<td>Square Edge</td>
<td>6.6</td>
<td>1.40</td>
</tr>
<tr>
<td>120 x 120</td>
<td></td>
<td>Tapered Edge</td>
<td>6.6</td>
<td>1.40</td>
</tr>
<tr>
<td>6</td>
<td>60 x 240</td>
<td>Square Edge</td>
<td>17.4</td>
<td>0.35</td>
</tr>
<tr>
<td>120 x 240</td>
<td></td>
<td>Tapered Edge</td>
<td>17.4</td>
<td>0.35</td>
</tr>
<tr>
<td>8</td>
<td>60 x 240</td>
<td>Square Edge</td>
<td>34.8</td>
<td>0.35</td>
</tr>
<tr>
<td>120 x 280</td>
<td></td>
<td>Tapered Edge</td>
<td>34.8</td>
<td>0.35</td>
</tr>
<tr>
<td>10</td>
<td>120 x 240</td>
<td>Square Edge</td>
<td>63.6</td>
<td>0.35</td>
</tr>
<tr>
<td>120 x 240</td>
<td></td>
<td>Tapered Edge</td>
<td>63.6</td>
<td>0.35</td>
</tr>
<tr>
<td>12</td>
<td>120 x 300</td>
<td>Square Edge</td>
<td>87.0</td>
<td>0.28</td>
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<tr>
<td>16</td>
<td>120 x 240</td>
<td>Square Edge</td>
<td>73.3</td>
<td>0.35</td>
</tr>
<tr>
<td>18</td>
<td>120 x 240</td>
<td>Square Edge</td>
<td>73.3</td>
<td>0.35</td>
</tr>
</tbody>
</table>

**Ward Grain**
- Made from Elephant Portland Cement, Silica, and special cellulose without asbestos, which are lighter than traditional brick walls. SCG SmartBoard is a new generation fiber-cement material which produced using Firm & Flex Technology that gives flexibility without losing durability.

**3-inch Square Lining**
- Made from Elephant Portland Cement, Silica, and special cellulose without asbestos, which are lighter than traditional brick walls. SCG SmartBoard is a new generation fiber-cement material which produced using Firm & Flex Technology that gives flexibility without losing durability.

**Ventilated**
- Made from Elephant Portland Cement, Silica, and special cellulose without asbestos, which are lighter than traditional brick walls. SCG SmartBoard is a new generation fiber-cement material which produced using Firm & Flex Technology that gives flexibility without losing durability.

**4-inch Square Lining**
- Made from Elephant Portland Cement, Silica, and special cellulose without asbestos, which are lighter than traditional brick walls. SCG SmartBoard is a new generation fiber-cement material which produced using Firm & Flex Technology that gives flexibility without losing durability.

**Golden Tack Color**
- Made from Elephant Portland Cement, Silica, and special cellulose without asbestos, which are lighter than traditional brick walls. SCG SmartBoard is a new generation fiber-cement material which produced using Firm & Flex Technology that gives flexibility without losing durability.

### Choosing SCG SmartBoard to match your application

**Application**
- Any room that you want to prevent from termites and moisture, for example: Bathrooms, Kitchens, Storage rooms, etc.

**Usage area**
- Series
  - Square Edge
  - Tapered Edge

**Installation System**
- Series
  - Smooth Surface
  - Ventilated
  - Wood Grain
  - Wood Grain/Square Lining

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SCG SmartBoard Equipments for installation

SCG Self Drilling Point Screw 10 mm
- Used to fix the SCG SmartBoards C 74 and U 76 Galvanized Frames, or the SCG SmartBoards C 74 and C 74 Galvanized Frames in order to make a door or window frame.
- Easily install, can drill and fix firmly with two or three layers of 0.55 mm thickness of steel coating frames.
- Endure to the rust or corrosion because the material is made from high-quality steel wires, can be used either external or internal.
- Containing size: 500 pieces / box

SCG Needle Point Screw 23 mm
- Specially designed to suit with the work operated with Fiber cement material safety, endure, and nice.
- Longer life for rust or corrosion, because the material is made from high-quality steel wires, can be used either external or internal.
- Designed to provide special drill end, which will not require advance penetration, easily operated, and can drill rapidly into the steel.
- Can core the panel allowing the screw head to be perfectly and nicely embedded into the panel. The fin will automatically break whenever the steel is eventually penetrated.
- Containing size: 500 pieces / box

SCG Self Drilling Wing Screw 32 mm
- Specially designed to suit with the work operated with Fiber cement material safety, endure, and nice.
- Longer life for rust or corrosion, because the material is made from high-quality steel wires, can be used either external or internal.
- Designed to provide special drill end, which will not require advance penetration, easily operated, and can drill rapidly into the steel.
- Can core the panel allowing the screw head to be perfectly and nicely embedded into the panel. The fin will automatically break whenever the steel is eventually penetrated.
- Containing size: 500 pieces / box

SCG SmartBoard Acrylic Joint Compound
- This is a joint-plastering material made by already mixed high-quality acrylic. It is prompt to use for plastering the joint of SCG SmartBoard, or other fiber cement panel inside the building.
- Viscous acrylic matte, smoothly plastered, and the surface can be furnished easily while exposing nice plastering or coated panting.
- Suit with Ceiling work.
- Containing size: 5 kg / box

SCG SmartBoard Plaster Joint Compound
- This is ready-usable plaster cement for joint plastering especially made for SCG SmartBoard. The cement matrix is viscous resulting into smooth plastering surface, easily mixed, no shrinkage, crack, peeling because the material provide high adhesive and can be easily furnished by sand paper.
- Suit with wall work.
- Containing size: 25 kg / box

SCG SmartBoard C-74, U 76 Galvanized Frame
- Thick steel material providing strength, safety, and manufactured in accordance with TIS. 863-2532 with full thickness of 0.55 mm.
- Economic section with 45, 47 mm width frame section, which will not require to make the support for the frame in the joint area between SCG SmartBoard panel, and will reduce the time and labor for installation. The material is endured for corrosion or rust, and the surface is coated by Hot Dip Galvanized Steel 220.
- Coated by specially thick surface to prevent rust or corrosion.

Tools and Equipment

1. Ceiling Installation
   1.1 Space lining ceiling installation with wooden frame
   1.2 Space lining ceiling installation with metal frame
   1.3 Concealed Ceiling Installation
   1.4 T - Bar Ceiling Installation
   1.5 Curved Surface Installation

2. Partition Installation
   2.1 Space Lining Extream Partition Installation
   2.2 Inner Space Lining Wall Installation
   2.3 Inner Concealed Edge Wall Installation
   2.4 Bended Wall Installation

3. Flooring Installation

4.  การติดตั้งเป็นแผงติดผนัง

5. Fixing and Hanging objects
   5.1 Fixing and Hanging objects
   5.2 SCG SmartBoard Maintenance

6. Placing Ceramic Tiles on SmartBoard

SCG SmartBoard Cutting and Drilling

SCG SmartBoard equipments for installation

SCG SmartBoard Equipments for installation

SCG SmartBoard Equipments for installation

SCG SmartBoard Equipments for installation

SCG SmartBoard Equipments for installation
**Tool and Equipment**

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### Leveled Equipment
- Level
- Net
- Plummet

### Drill, Cut, Drive, Hold Equipment
- SCG Needle Point Screw
- SCG Self Drilling Screw
- SCG Self Drilling Wing Screw
- SCG Butterfly-wing plastic hook
- SCG Plummet
- Drilling Machine
- Hammer
- TC Cutter (for 4mm thickness)
- Electric Fiber cutter

### Metal Frame
- Galvanized iron metal frame for T-Bar ceiling
- Galvanized iron metal ceiling frame (C-Line)
- Structure steel metal wall frame
- SCG SmartBoard C-74, U 76
- Galvanized Frame

### Patching Material and Equipment
- SCG SmartBoard polyurethane joint sealant
- SCG SmartBoard Acrylic Joint Compound
- SCG SmartBoard Plaster Joint Compound
- Stainless trowel (11 inch)
- Stainless trowel (6 inch, 8 inch)

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**6. Placing Ceramic Tiles on SmartBoard**

### Frames and Accessories
- Jointing Substance: Tile Adhesive Cement
- SCG SmartBoard: Squared Edge with 8 - 12 mm. thickness

### Set-Up Instruction
1. Prepare the surface of SmartBoard by cleaning and applying primer, then leave it dry.
2. Use the trowel to spread Tile Adhesive cement on all area of SmartBoard.
4. Place all tiles on SmartBoard. Leave it dry for 7 days for stable setting purpose. Then, joint the gap between tiles by filling Tile Adhesive sealant (Different type from Tile Adhesive cement).

### Suggestion about Placing ceramic tiles on SmartBoard
It is our recommendation not to do it on the panel which is over 5 meters long. In such case, technical discussion in details with us is needed.

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*Color of the products in this brochure may vary slightly due to the printing system. The information in this brochure may be modified or updated by the company without prior notice.*
3.2 SCG SmartBoard Maintenance

Metal Frame and Accessories
- Metal Frame: C-line frame
- Fixing Equipment: SCG Needle Point Screw 23 mm.
- Sealant Equipment: SCG SmartBoard Plaster Joint Compound, Sand Paper

Installation Procedure

• In case of Minor Damage (Less than 2cm. crack)
  1. Apply cotton tape in the form of a cross and apply the first coat of SCG SmartBoard Plaster Joint Compound.
  2. After the first coat of plaster is set, apply the second coat and polish with sand paper after it dries.

• In case of Moderate Damage (2 - 5 cm. crack)
  1. Cut C-line frame 10 cm. longer than the crack on each side.
  2. Insert the C-line frame from behind by using string before drilling the SCG Needle Point Screw 23 mm.
  3. Apply the cotton tape in the form of a cross over the crack then apply two layers of SCG SmartBoard Plaster Joint Compound, polish with sand paper, and apply coat of color.

• In case of Major Damage (More than 5 cm. crack)
  1. Use electric saw to cut out the damage area.
  2. Fix the C-line frame with SCG self-drilling screws. Apply the cotton tape then apply two layers of Smart Plaster, polish with sand paper, and apply coat of color.
  3. Drill small hole continuously with electric drilling machine according to the set line. Use the hammer to knock the unwanted piece to come off.

SmartBoard Cutting and Drilling

Tolls and Accessories
- Cutting Tool: Electric Fiber cutter (4 inch-size) or cutter with 1 inch wide-blade
- Drilling Tool: Drilling Machine
- Grinding Tool: Sandpaper, file

Set-Up Instruction

To cut with electric cutter: suitable for Smart Board in every size (3.5 - 12 mm.)

To cut with cutter: suitable for SmartBoard 3.5 - 4 mm

To drill Smart Board

Trim the edge with sandpaper
## Ceiling Installation

### Space Lining Ceiling Installation with Wooden Frame

**Frame and Accessories**
- **Frame**: Hard wood frame size 1.5 x 3 inches
- **Connecting Tools**: SCG Needle Point Screw 23 mm. or 1 inch nail
- **Sealant Equipment**: SCG SmartBoard Plaster Joint Compound
- **SCG SmartBoard**: Squared Edge 3.5 - 6 mm.

**Set-Up Instruction**
1. Install hard wood frame size 1.5 x 3 inches. The distance between frames is 60 x 60 cm. with straight surface, no twisting.
2. Install SCG SmartBoard. The distance between SmartBoard is around 0.5 cm.
3. Tight the SmartBoard with SCG Needle point screw 23 mm. or 1 inch nail, 20 cm. apart.
4. For cornering, cut the SmartBoard oblique as the frame and tight with needle point screw.
5. Use SCG SmartBoard Plaster Joint Compound joint between SmartBoards, pull the cotton tape and leave it dry for 7 days.
6. Apply the primer and paint with Acrylic paint twice.

## Fixing and Hanging Objects

### 5.1 Fixing and Hanging Objects

**Set-Up Instruction**
1. Mark and drill your desire point. Sunk butterfly-wing plastic hook into the ceiling or wall hole.
2. Drill the screw into the butterfly-wing plastic hook. When the screw is completely installed, the butterfly-wing will be tightly fix with the SmartBoard.
3. SCG SmartBoard 3.5 mm. thick
4. SCG SmartBoard 4 mm. thick
5. SCG SmartBoard 6 mm. thick
6. SCG SmartBoard 8 mm. thick

**Recommendations**
1. Use the table below to estimate the weight-bearing level of different thickness and usage of SmartBoard.
2. When hanging heavy weight objects, it is advised to fix your object in the position that is on the studs, the maximum weight stand will also vary depending on the strength of different studs.

### Table: Maximum Weight Stand (kg.)

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Accessory</th>
<th>Maximum Weight Stand (kg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCG SmartBoard</td>
<td>Ceiling</td>
<td>butterfly-wing plastic hook PT - 5</td>
<td>5</td>
</tr>
<tr>
<td>SCG SmartBoard</td>
<td>Ceiling</td>
<td>butterfly-wing plastic hook PT - 5</td>
<td>7</td>
</tr>
<tr>
<td>SCG SmartBoard</td>
<td>Ceiling</td>
<td>butterfly-wing plastic hook PT - 13</td>
<td>10</td>
</tr>
<tr>
<td>SCG SmartBoard</td>
<td>Wall</td>
<td>butterfly-wing plastic hook PT - 13</td>
<td>80</td>
</tr>
</tbody>
</table>

Suggestion: Hanging devices can be fixed to both ceiling and wall by using the following accessories.
4 Flooring Installation

**Suggestion**
For fixing SCG SmartBoard with 1'' concrete nail, be careful not to deepen the nail to reach reinforcing steel level. Adjust the surface to be the same level before installation.

**Installation Procedure**
1. Prepare leveled and polished rough surface concrete by let it has 7 days setting time.
2. Mark nailing guideline every 40 cm. and away from the edge 5 cm.
3. For column, cut the SmartBoard to fit around the corner.
4. Apply Latex to entire SmartBoard.
5. Fix SCG SmartBoard with 1'' concrete nail at marked point and keep 1cm. away between SmartBoard sheet overlapped.
6. Install Wooden Flooring for example Laminate, Parquet.

**Installation Process**
1. Install Hollow steel square section 2 x 3 inches, 1.2 mm. thick.
2. Install SCG SmartBoard, The distance between SmartBoard is around 0.5 cm.
3. Tight the SmartBoard with SCG Self Drilling Wing Screw 28.5 mm., 20 cm. apart.
4. Use the tape clothe before using SCG SmartBoard Polyurethane joint sealant for the smoother of jointing.
5. Use Elephant Polyurethane sealant joint between SmartBoards, pull the cotton tape and leave it dry for 7 days.
6. Apply the primer and paint with Acrylic paint twice.
1.3 Concealed Ceiling Installation

**Metal studs and tools**
- **Metal stud**: galvanized iron metal ceiling frame (C-line) No. 24, minimum width of 38 mm.
- **Connection tool**: SCG needle point screw 23 millimeters in length
- **Face tool**: SCG SmartBoard Acrylic Joint Compound, stainless trowel, square wooden-tray, tape cloth, sand paper no.3
- **SCG SmartBoard**: 4-side Tapered Edge 6 mm. thick

**Set-up Instruction**

1. **Set up the metal studs to the level by lining up major metal studs no more than 80 cm. apart from each other and minor studs 40 cm. apart.**

2. **In case of setting up the ceiling under the roof, use doubled-minor studs at the connection point of SmartBoard, on the short-sided.**

3. **Check over the level-adjusted tool, make it 100 cm. apart parallel to the major metal studs row.**

4. **Stick the SmartBoard sheet into metal stud with SCG needle point screw 23 mm. in length, along with adding minor studs at the point connection on the long-sided.**

5. **Fix Elephant needle point screw 1.2 cm. away from the sheet edge and 20 cm. apart from each other.**

6. **Use the corner trowel to check over the nail’s head area before troweling. The head of the nail should sink into SmartBoard about 1 mm. deep.**

7. **Bring next floor panel SCG SmartBoard to joint with.**

8. **Cover the screw head by SCG Grumcrete.**

9. **Install next floor panel SCG SmartBoard by following the above Method until complete, and clean all surface to be out of dust and oil stain by moist cloth.**

10. **Install the surface cover material such as ceramic tile, laminate, parquet, etc. (as indicated in Method).**

11. **In case that the surface cover material is not installed, clean the floor and coat by the prime coat for original cement prior coating with EPOXY twice (as suggested by maker) in order to prevent the surface from scratching.**

12. **Shape the SCG Grumcrete that excesses properly and fixed the panel by SCG Self Drilling Screw 45 mm. The panel shall be installed alternately in order to stagger the joint.**
**Installation Method**

1. Check the top level of ceiling frame by water, and the frame spacing must not higher than that designed.

2. Space the floor panel SCG SmartBoard on the ceiling frame and fixed by SCG Self Drilling Screw 45 mm., with maximum 40 mm. spacing, and 1.2 cm. distance from panel’s edge.

3. Clean the panels edge area.

4. Mix SCG Grumcrete with the designated ratio.

5. Bring mixed SCG Grumcrete to paste on the edge of floor panel SCG SmartBoard.

**Troweling Instruction**

Method for Smooth Plastering (only the SCG SmartBoard Acrylic Joint Compound shall be used to plaster the joint between the SmartBoards. All System and Opening works shall be completed prior the plastering).

6. Use 6" trowel to make first plastering for 15 cm width.

7. Use 3.5 cm width cloth tape to cover the joint, and plaster over this cloth tape again, and left until dry.

8. Make second plastering by 8" trowel by plastering for 20 cm. and left until dry.

9. Make third plastering by 11" trowel by plastering for 28 cm. and left until dry for 1 day.

10. Polish the plastering by No.120 water-sand paper, and paste the prime coating for original plaster for whole ceiling board prior covered by 100% Acrylic Paint for at least 2 layers.

**Recommendation:**

The smooth plastered SCG SmartBoard ceiling shall be installed in the area which will not directly contact to water, or the area that tend to be vibrated by structure.
3. **Floor Installation**

**1.4 T-BAR Ceiling Installation**

**Metal studs and tools**

- **Metal stud**: galvanized iron metal frame T-Bar 38 mm. in height
- **Connection tool**: SCG butterfly-wing plastic-hook 37 mm. in length, SCG needle point screw 38 mm. in length
- **SCG SmartBoard**: Squared Edge 3.5, 4 and 6 mm. thick, cut into 60 x 120 cm. or 60 x 60 cm.

**Set-up Instruction**

1. Check level-adjusted tool, make it 121 cm. apart parallel to the major studs row.
2. Cut SmartBoard into 60 x 120 cm. paint the surface with old cement primer paint, Acrylic paint 2 times for complete cover up of the original color, wait it dry.
3. Attach SmartBoard to prepared studs.

Instruction:

- In case need ceiling size 60 x 60 cm. enhance major studs 60.5 cm. in length with existing studs 121 x 60.5 cm.

---

**Work preparation**

1. Prepare the structure to support the floor panel SCG SmartBoard by allow the size and spacing of ceiling frame to support the load safely as designed by the Engineer, or can choose the size and spacing of ceiling frame approximately from the Table.

**Table 1 Spacing of stinger for the maximum safe load**

<table>
<thead>
<tr>
<th>Type of building</th>
<th>Distance of support (cm.)</th>
<th>Use Load (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCG SmartBoard for flooring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>House / Residence</td>
<td>40</td>
<td>150</td>
</tr>
<tr>
<td>Hotel / Dormitory</td>
<td>30</td>
<td>200</td>
</tr>
<tr>
<td>Office / Bank</td>
<td>40</td>
<td>250</td>
</tr>
<tr>
<td>School / University</td>
<td>40</td>
<td>300</td>
</tr>
<tr>
<td>Department Store / Cinema / Hall / Restaurant / Carpark</td>
<td>30</td>
<td>400</td>
</tr>
<tr>
<td>Cargo / Museum / Plant / Publisher</td>
<td>30</td>
<td>500</td>
</tr>
</tbody>
</table>

Remark:
- Floor panel SCG SmartBoard shall not support point load higher than 100 kg. on 10 sq.cm. area.
- Do not use in the area which always wet and moist.

2. The frame must provide at least 4.5 cm. width, in case that the steel frame is used there should be a rust protection at appropriate level and suit to the environment and operating condition.

3. In case that the floor panel will be installed in the large continuous area which is more than 6 mm, the joints of floor panel and ceramic tile should be placed, and sealed by SCG SmartBoard Polyurethane joint sealant.
2.4 Bended Wall Installation

**Set-Up instruction**

Smartboard is flexible, so it can be bended without water soaking as follows instructions:

1. Positioning the bended wall installation on both ceiling and floor
2. Set up the SCG SmartBoard U 76 Galvanized Frame on the floor and the ceiling with 5-10 cm. apart from each other with the concrete hook at every 30 cm.
3. Set up the SCG SmartBoard C-74 Galvanized Frame as 30 cm. apart from each other.
4. Attach the SmartBoard to the SCG SmartBoard C-74 Galvanized Frame with SCG self drilling screws 23 mm. with 20 cm. apart from each other and 1.2 cm. from the edge.

**Suggestion**

SCG SmartBoard can be bended by attach the board to the frame as the fixed radiance as follows:

<table>
<thead>
<tr>
<th>Product</th>
<th>Thickness (mm)</th>
<th>Lowest Possible bended radiance</th>
<th>Space between frame</th>
<th>Space between connections tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>SmartBoard wall</td>
<td>8</td>
<td>2.00 m.</td>
<td>30 cm.</td>
<td>20 cm.</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>4.00 m.</td>
<td>30 cm.</td>
<td>20 cm.</td>
</tr>
</tbody>
</table>

**Remark:** The mentioned radius is for horizontal bending only.

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1.5 Curved Surface Installation

**Set-Up Instruction**

Bend studs to have firm curve of desired radius.

**Metal Studs and tools**

- **Metal Stud:** galvanized iron metal ceiling frame (C-Line) No.24
- **Connection Tools:** SCG needle point screw 23 mm. in length
- **SCG Smartboard:** Squared or tapered edge 4 mm. or 6 mm. thick.

**Set-Up instruction**

1. Bend studs to have firm curve of desired radius.
2. Fix minor studs to major studs no more than 40 cm. apart.
3. Attach curved stud to structural element no more than 100 cm. apart from each.
4. Attach SmartBoard to minor studs by SCG needle point screw 23 cm. length, 20 cm. apart from each.

**Remark:** In case need to trowel connection point, you can do as the process for concealed ceiling.

**Product**

- **SmartBoard Ceiling**
  - **Thickness:** 3.6 - 4.0 mm.
  - **Minimum Redius:** 1.00 m.
  - **Spacing between minor studs:** 40 cm.
  - **Spacing between connection tool:** 20 cm.

**Note:** Above radius is radius of Elephant SmartBoard in length.
Partition Installation

2.1 Spacing Lining External Partition Installation

**Metal studs and tools**
- **Metal stud**: C-casting steel 75 x 45 x 15 x 2.3 mm.
- **Connection tool**: SCG self drilling wing screw 32 mm., SCG self drilling screw 45 mm.
- **Line-jointing gap tools**: SCG SmartBoard polyurethane joint sealant
- **Corner covered tools**: SCG cement corner
- **SCG SmartBoard**

**Set-up Instruction**
1. Fix studs to structural element no more than 60 cm. apart.
2. Attach Ayara heat resistant board or moist prevention board to the studs.
3. Connect SmartBoard with SCG twist nail, drilled edge, with flank, 32 mm in length, 20 cm apart from each other and 1.2 cm apart from edge of board.
4. Leave the space between board 0.5 – 1.0 cm.
5. Cover the space with tape before applying SCG SmartBoard polyurethane joint sealant, take tape off, wait until dry.

2.2 Spacing Lining Internal Partition Installation

**Metal Studs and Tools**
- **Metal Stud**: SCG SmartBoard C-74, U 76 Galvanized Frame
- **Connection Tools**: SCG self drilling screw 23 mm., SCG needle point screw 10 mm.
- **Face Tool**: SCG SmartBoard polyurethane joint sealant
- **SCG SmartBoard**: 2-side Tapered Edge 8 mm. thickness, size 120 x 280 cm.

**Set-Up Instruction**
1. Set up the SCG SmartBoard U 76 Galvanized Frame on the floor and the ceiling with 60 cm. concrete hook and after that set up the SCG SmartBoard C-74 Galvanized Frame as 60 cm. apart from each other.
2. Attach the tapered edge SmartBoard with SCG needle point screw 23 mm. as 20 cm. apart from each other.

2.3 Inner Concealed Edge Wall Installation

**Metal Studs and Tools**
- **Metal Stud**: SCG Smartboard C-74, U 76 Galvanized Frame
- **Connection Tools**: SCG self drilling screw 23 mm., SCG needle point screw 10 mm.
- **Face Tool**: SCG SmartBoard polyurethane joint sealant
- **SCG SmartBoard**: 2-side Tapered Edge 8 mm. thickness, size 120 x 280 cm.

**Set-Up Instruction**
The set-up step is the same as Inner Space Lining wall Installation but the do not have to add the metal stud between the lining space.

**Installation step**
Step of concealed edge wall installation is the same as the concealed edge ceiling installation.

**Suggestion**
Concealed Edge wall : using advised only inner the building or dry area only.
2.2 Installation Method for Internal Wall (joint spaced)

Installation Method in door or window area

1. Install the door or window frame to the ceiling frame with SCG Needle Point Screw 23 mm., with 15 cm. spacing.

2. Seal the joint between panel and frame with SCG SmartBoard Polyurethane joint sealant.

Installation Method in wall corner

1. Make the gap for 0.5 - 1.0 cm at wall corner, and Seal the joint between panel and frame with SCG SmartBoard Polyurethane joint sealant.

Suggestion

For external partition installation, should consider about wind and other forces.

Table: Height of Building (m.) vs. Length between SmartBoard (cm.)

<table>
<thead>
<tr>
<th>Height of Building (m.)</th>
<th>Length between SmartBoard (cm.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8 mm.</td>
</tr>
<tr>
<td>Less than 10</td>
<td>40</td>
</tr>
<tr>
<td>10 - 20</td>
<td>Not Recommend</td>
</tr>
<tr>
<td>20 - 30</td>
<td>Not Recommend</td>
</tr>
<tr>
<td>More than 30</td>
<td>Not Recommend</td>
</tr>
</tbody>
</table>

Remark: length between and the thickness of SmartBoard, follow the engineer, who design the building.
2.2 Installation Method for Internal Wall (joint spaced)

**Metal Studs and tools**
- **Metal Stud**: SCG SmartBoard C-74, U 76 Galvanized Frame
- **Connection Tools**: SCG self drilling screw 23 mm.
- **Face Tool**: SCG SmartBoard polyurethane joint sealant
- **SCG Smartboard**: Squared Edge 8 mm. thickness, 2 size 120 x 240 cm, 120 x 80 cm.
  - 4-inch Square Lining 8 mm. thickness, size 120 x 80 cm.
- **6-inch Square Lining Wood Grain (Golden Teak Color) 6, 8 mm. thickness, size 60 x 300 cm.**

**Installation Method**

1. **Determine the alignment of wall on the floor and ceiling board.**

2. **Install the SCG SmartBoard U 76 Galvanized Frame on the floor and ceiling board on the required alignment by using the 37 mm SCG plastic pintle, and 38 mm sharp end SCG screw, in 60 cm spacing.**

3. **Install the SCG SmartBoard C 74 Galvanized Frame into the SCG SmartBoard U 76 Galvanized Frame by insert and twist to be perpendicular to the SCG SmartBoard U 76 Galvanized Frame, in 60 cm spacing.**

4. **Fix the SCG SmartBoard C 74 Galvanized Frame to the SCG SmartBoard U 76 Galvanized Frame by 10 mm. sharp end screw.**

5. **In case that general light-weight frame is used, another pair frames shall be used to support the joint between the SCG SmartBoard.**

6. **When the wall height is higher than 240 cm, the SCG SmartBoard U 76 Galvanized Frame shall be used to support on upper horizontal line at the panel level 240-280 cm as for supporting the panel jointing.**

7. **Install the ducts for electric and plumbing system including the signal cable prior the installation of SCG SmartBoard.**

8. **Fix the SCG SmartBoard to the frame by using the 23 mm. SCG sharp end screw with 20 cm spacing, and at 1.2 cm. edge distance, with 5 cm distance from the panel’s corner.**

9. **Leave space of gap for 0.8 cm. (equal to pane’s thickness).**

10. **Cover the screw head by SCG SmartBoard Plaster Joint Compound for the joint properly.**

11. **Use the glue tape to cover the joint prior sealing the joint by SCG SmartBoard Polyurethane Joint Sealant, then peel the glue tape off, and let it dry.**

12. **Coat the prime coat for original cement for 1 layer, and cover again by Acrylic Paint for at least 2 layers.**

*Remark*: In case that the SCG SmartBoard with 6î lining, golden teak style is used as real wall, the frame should be installed in every joint along the length of panel in order to allow sealing of the joint by SCG SmartBoard Polyurethane joint sealant.
2.2 Installation Method for Internal Wall (joint spaced)

**Metal Studs and tools**

<table>
<thead>
<tr>
<th>Metal Stud</th>
<th>SCG SmartBoard C-74, U 76 Galvanized Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection Tools</td>
<td>SCG self drilling screw 23 mm.</td>
</tr>
<tr>
<td>Face Tool</td>
<td>SCG SmartBoard polyurethane joint sealant</td>
</tr>
<tr>
<td>SCG Smartboard</td>
<td>Squared Edge 8 mm. thickness, 2 size 120 x 240 cm, 120 x 80 cm. 4-inch Square Lining 8 mm. thickness, size 120 x 80 cm. 6-inch Square Lining Wood Grain (Golden Teak Color) 6, 8 mm. thickness, size 60 x 300 cm.</td>
</tr>
</tbody>
</table>

**Installation Method**

1. Determine the alignment of wall on the floor and ceiling board.
2. Install the SCG SmartBoard U 76 Galvanized Frame on the floor and ceiling board on the required alignment by using the 37 mm SCG plastic pintle, and 38 mm sharp end SCG screw, in 60 cm spacing.
3. Install the SCG SmartBoard C 74 Galvanized Frame into the SCG SmartBoard U 76 Galvanized Frame by insert and twist to be perpendicular to the SCG SmartBoard U 76 Galvanized Frame, in 60 cm spacing.
4. Fix the SCG SmartBoard C 74 Galvanized Frame to the SCG SmartBoard U 76 Galvanized Frame by 10 mm. sharp end screw.

In case that general light-weight frame is used, another pair frames shall be used to support the joint between the SCG SmartBoard.

5. Install the ducts for electric and plumbing system including the signal cable prior the installation of SCG SmartBoard.

6. Leave space of gap for 0.8 cm. (equal to pane's thickness).

7. Use the glue tape to cover the joint prior sealing the joint by SCG SmartBoard Polyurethane Joint Sealant, then peel the glue tape off, and let it dry.

8. Coat the prime coat for original cement for 1 layer, and cover again by Acrylic Paint for at least 2 layers.

*Remark*: In case that the SCG SmartBoard with 6î lining, golden teak style is used as real wall, the frame should be installed in every joint along the length of panel in order to allow sealing of the joint by SCG SmartBoard Polyurethane joint sealant.
2.2 Installation Method for Internal Wall (joint spaced)

**Installation Method in door or window area**

1. Make the gap for 0.5 - 1.0 cm at wall corner, and Seal the joint between panel and frame with SCG SmartBoard Polyurethane joint sealant.

**Installation Method in wall corner**

1. Install the door or window frame to the ceiling frame. SCG Needle Point Screw 23 mm., with 15 cm. spacing.

2. Seal the joint between panel and frame with SCG SmartBoard Polyurethane joint sealant.

### Installation Near Ground

- Lift up from the ground 8 mm.
- Reinforce concrete beam

### Height of Building (m.)

<table>
<thead>
<tr>
<th>Height of Building (m.)</th>
<th>Length between SmartBoard (cm.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The Thickness of SmartBoard</td>
</tr>
<tr>
<td></td>
<td>8 mm.</td>
</tr>
<tr>
<td>Less than 10</td>
<td></td>
</tr>
<tr>
<td>10 - 20</td>
<td></td>
</tr>
<tr>
<td>20 - 30</td>
<td>Not Recommend</td>
</tr>
<tr>
<td>More than 30</td>
<td>Not Recommend</td>
</tr>
</tbody>
</table>

**Remark:** length between and the thickness of SmartBoard, follow the engineer, who design the building.
2.1 Spacing Lining External Partition Installation

**Metal Studs and Tools**
- **Metal Stud**: C-casting steel 75 x 45 x 15 x 2.3 mm.
- **Connection Tool**: SCG self-drilling wing screw 32 mm., SCG self-drilling screw 45 mm.
- **Line-Joining Gap Tools**: SCG SmartBoard polyurethane joint sealant
- **Corner Covered Tools**: SCG cement corner
- **SCG SmartBoard**: Squared Edge 8 - 12 mm. thick

**Set-Up Instruction**

1. **Fix Studs to Structural Element**
   - No more than 60 cm. apart.

2. **Attach Ayara Heat Resistant Board or Moist Prevention Board to the Studs**
   - Connect with SCG twist nail, drilled edge, with flank, 32mm in length, 20 cm apart from each other and 1.2 cm apart from the edge of the board.

3. **Fix Elephant Cement Corner by Butterfly-Wing Plastic-Hook**
   - 37 mm. in length and SCG Needle Point Screw 38 mm. in length to external corner

4. **Leave the Space Between Board**
   - 0.5 – 1.0 cm.

5. **Cover the Space with Tape**
   - Before applying SCG SmartBoard polyurethane joint sealant, take tape off, wait until dry.

6. **Fix Ayara Heat Reflection Board or Moist Prevention Board to the Studs**
   - SCG SmartBoard polyurethane joint sealant

**Suggestion**

- Using advised only inner the building or dry area only.

2.3 Inner Concealed Edge Wall Installation

**Metal Studs and Tools**
- **Metal Stud**: SCG SmartBoard C-74, U 76 Galvanized Frame
- **Connection Tool**: SCG self-drilling screw 23 mm., SCG needle point screw 10 mm.
- **Face Tool**: SCG SmartBoard polyurethane joint sealant
- **SCG SmartBoard**: 2-side Tapered Edge 8 mm. thickness, size 120 x 280 cm.

**Set-Up Instruction**

- **Set up the SCG SmartBoard U 76 Galvanized Frame**
  - On the floor and the ceiling with 60 cm. concrete hook and after that set up the SCG SmartBoard C-74 Galvanized Frame as 60 cm. apart from each other

- **Attach the Tapered Edge SmartBoard with SCG Needle Point Screw 23 mm.**
  - As 20 cm. apart from each other (as the picture)

**Installation Step**

- **Step of concealed edge wall installation is the same as the concealed edge ceiling installation**

**Suggestion**

- **Concealed Edge Wall**: Using advised only inner the building or dry area only.
2.4 Bended Wall Installation

**Set-Up Instruction**

Smartboard is flexible, so it can be bended without water soaking as follows:

1. Position the bended wall installation on both ceiling and floor.
2. Set up the SCG SmartBoard U 76 Galvanized Frame on the floor and the ceiling with 5-10 cm. apart from each other with the concrete hook at every 30 cm.
3. Set up the SCG SmartBoard C-74 Galvanized Frame as 30 cm. apart from each other.
4. Attach the SmartBoard to the SCG SmartBoard C-74 Galvanized Frame with SCG self drilling screws 23 mm. with 20 cm. apart from each other and 1.2 cm. from the edge.

**Suggestions**

SCG SmartBoard can be bend-installed by attach the board to the frame as the fixed radius as follows:

- **Metal Studs and tools**
  - Metal Stud: SCG SmartBoard C-74, U 76 Galvanized Frame
  - Connection Tools: SCG Self Drilling Screw 23 mm.
  - SCG SmartBoard: Squared Edge 8 mm. thickness

**Remark:** The mentioned radius is for horizontal bending only.

<table>
<thead>
<tr>
<th>Product</th>
<th>Thickness (mm.)</th>
<th>Lowest Possible Bended Radius</th>
<th>Space between Frame</th>
<th>Space between Connections Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>SmartBoard wall</td>
<td>8</td>
<td>2.00 m.</td>
<td>30 cm.</td>
<td>20 cm.</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>4.00 m.</td>
<td>30 cm.</td>
<td>20 cm.</td>
</tr>
</tbody>
</table>

1.5 Curved Surface Installation

**Set-Up Instruction**

- Bend studs to have form curve of desired radius.
- Attach curved stud to structural element no more than 100 cm. apart from each.
- Fix minor studs to major studs no more than 40 cm. apart.
- Attach SmartBoard to minor studs by SCG needle point screw 23 cm. length, 20 cm. apart from each other.

**Remark:** In case need to trowel connection point, you can do as the process for concealed ceiling.

**Product**

- **SmartBoard Ceiling**
  - Thickness: 6 mm.
  - Minimum Redius: 1.50 m.
  - Spacing between minor studs: 40 cm.
  - Spacing between connection tool: 20 cm.

**Note:** Above radius is radius of Elephant SmartBoard in length
1.4 T-BAR Ceiling Installation

**Metal studs and tools**
- Metal stud: galvanized iron metal frame T-Bar 38 mm. in height
- Connection tool: SCG butterfly-wing plastic-hook 37 mm. in length, SCG needle point screw 38 mm. in length
- SCG SmartBoard: Squared Edge 3.5, 4 and 6 mm. thick, cut into 60 x 120 cm. or 60 x 60 cm.

**Set-up Instruction**

1. Set up the metal studs to the level by lining up major metal studs no more than 121 cm. apart from each other and minor studs 60.5 cm. apart.

2. Check cover the level-adjusted tool, make it 121 cm. apart parallel to the major studs row.

3. Cut SmartBoard into 60 x 120 cm. paint the surface with old cement primer paint, Acrylic paint 2 times for complete cover up of the original color, wait it dry.

4. Attach SmartBoard to prepared studs.

**Instruction:**
In case need ceiling size 60 x 60 cm. enhance major studs 60.5 cm. in length with existing studs 121 x 60.5 cm.

---

### Floor Installation

#### 3 Work preparation

1. Prepare the structure to support the floor panel SCG SmartBoard by allow the size and spacing of ceiling frame to support the load safely as designed by the Engineer, or can choose the size and spacing of ceiling frame approximately from the Table.

#### Table 1 Spacing of stinger for the maximum safe load

<table>
<thead>
<tr>
<th>Thickness (mm)</th>
<th>Distance of support (cm)</th>
<th>Type of building</th>
<th>Live Load (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>40</td>
<td>Hotel / Dormitory</td>
<td>150</td>
</tr>
<tr>
<td>18</td>
<td>40</td>
<td>Office / Bank</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>School / University</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Departmentstore / Cinema / Hall / Restaurant / Carpark</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Cargo / Museum / Plant / Publisher</td>
<td>500</td>
</tr>
</tbody>
</table>

**Remark:** Floor panel SCG SmartBoard shall not support point load higher than 100 kg. on 10 sq.c.m. area. Do not use in the area which always wet and moist.

2. The frame must provide at least 4.5 cm. width, in case that the steel frame is used there should be a rust protection at appropriate level and suit to the environment and operating condition.

3. In case that the floor panel will be installed in the large continuous area which is more than 6 mm, the joints of floor panel and ceramic tile should be placed, and sealed by SCG SmartBoard Polyurethane joint sealant.
Installation Method

1. Check the top level of ceiling frame by the water, and the frame spacing must not higher than that designed.

2. Space the floor panel SCG SmartBoard on the ceiling frame and fixed by SCG Self Drilling Screw 45 mm., with maximum 40 mm. spacing, and 1.2 cm. distance from panel’s edge.

3. Clean the panels edge area.

4. Mix SCG Grumcrete with the designated ratio.

5. Bring mixed SCG Grumcrete to paste on the edge of floor panel SCG SmartBoard.

Troweling Instruction

7. Clean properly, the gap between plates shall be embedded by the SCG SmartBoard Acrylic Joint Compound, and left until dry.

8. Use 6” trowel to make first plastering for 15 cm. width.

9. Use 3.5 cm. width cloth tape to cover the joint, and plaster over this cloth tape again, and left until dry.

10. Make second plastering by 8” trowel by plastering for 20 cm. and left until dry.

11. Make third plastering by 11” trowel by plastering for 28 cm. and left until dry for 1 day.

12. Polish the plastering by No.120 water-sand paper, and paste the prime coating for original plaster for whole ceiling board prior covered by 100% Acrylic Paint for at least 2 layers.

Recommendation:

- The smooth-plastered SCG SmartBoard ceiling shall be installed in the area which will not directly contact to water, or the area that tend to be vibrated by structure.
1.3 Concealed Ceiling Installation

**Metal studs and tools**

- **Metal stud**: galvanized iron metal ceiling frame (C-line) No. 24, minimum width of 38 mm.
- **Connection tool**: SCG Needle Point Screw 23 millimeters in length
- **Face tool**: SCG SmartBoard Acrylic Joint Compound, stainless trowel, square wooden-tray, tape cloth, sand paper no.3
- **SCG SmartBoard**: 4-side Tapered Edge 6 mm, thick

**Set-up Instruction**

1. **Set up the metal studs to the level by lining up major metal studs no more than 80 cm. apart from each other and minor studs 40 cm. apart.**

2. **In case of setting up the ceiling under the roof, use doubled-minor studs at the connection point of SmartBoard, on the short-sided.**

3. **Check over the level-adjusted tool, make it 100 cm. apart parallel to the major metal studs row.**

4. **Install the SmartBoard sheet into metal stud with SCG Needle Point Screw 23 mm. in length, along with adding minor studs at the point connection on the long-sided.**

5. **Fix Elephant needle point screw 1.2 cm. away from the sheet edge and 20 cm. apart from each other.**

6. **Use the corner trowel to check over the nail’s head area before troweling. The head of the nail should sink into SmartBoard about 1 mm. deep.**

7. **Shape the SCG Grumcrete that excesses properly and fixed the panel by SCG Self Drilling Screw 45 mm. The panel shall be installed alternately in order to stagger the joint.**

8. **Bring next floor panel SCG SmartBoard to joint with.**

9. **Cover the screw head by SCG Grumcrete.**

10. **Install next floor panel SCG SmartBoard by following the above Method until complete, and clean all surface to be out of dust and oil stain by moist cloth.**

11. **Cover the screw head by SCG Grumcrete.**

12. **Install the surface cover material such as ceramic tile, laminate, parquet, etc. (as indicated in Method). In case that the surface cover material is not installed, clean the floor and coat by the prime coat for original cement prior coating with EPOXY twice (as suggested by maker) in order to prevent the surface from scratching.**
For fixing SCG SmartBoard with 1'' concrete nail, be careful not to deepen the nail to reach reinforcing steel level. Adjust the surface to be at the same level before installation.

Prepare leveled and polished rough surface concrete by letting it have 7 days setting time.

For column, cut the SmartBoard to fit around the corner. Apply Latex to the entire SmartBoard.

Fix SCG SmartBoard with 1'' concrete nail at the marked point and keep 1 cm. away between SmartBoard sheets overlapped.

Install Wooden Flooring for example Laminate, Parquet. The gap between each board is 1 cm., the gap between the edge is 2 cm. Leave 5 cm. gap from an angle of the board. The gap between two fixing points is not over 40 cm.

SCG SmartBoard Mark nailing guideline every 40 cm. and away from the edge 5 cm.

Underlaying Foam 20 cm. 20 cm. 1.2 cm. 1.2 cm. 1.2 cm. 1.2 cm. 20 cm. 20 cm.

Laminating material 20 cm. 20 cm. 1.2 cm. 1.2 cm. 1.2 cm. 1.2 cm. 20 cm. 20 cm.

SCG SmartBoard Self Drilling Wing Screw 28.5 mm. gap between screw 20 cm.

Tight the SmartBoard with SCG Self Drilling Wing Screw 28.5 mm., 20 cm. apart. Use the tape clothe before using SCG SmartBoard Polyurethane joint sealant for the smoother of jointing.

Use Elephant Polyurethane sealant joint between SmartBoards, pull the cotton tape and leave it dry for 7 days.

Frame and accessories
- Frame: Hollow steel square section 2x3 inches, 1.2 mm. thick
- Connecting Tools: SCG Self Drilling Wing Screw 28.5 mm.
- Jointing Tools: SCG SmartBoard Polyurethane joint sealant
- SCG SmartBoard: Squared Edge 3.5 - 6 mm.

Installation Process
1. Install Hollow steel square section 2 x 3 inches. The distance between frame is 60 x 60 cm. with a straight surface, no twisting.
2. Install SCG SmartBoard. The distance between SmartBoard is around 0.5 cm.
3. Apply the primer and paint with Acrylic paint twice.

Installation Procedure
- Flooring Installation
- Suggestion
- 1.2 Space lining ceiling installation with metal frame
- Preparatory work and accessories
- DCG Self Drilling Wing Screw 28.5 mm.
- Board Edge 3.5 mm.
- Air condition install
- Wood floor installation
1 Ceiling Installation

Space lining ceiling installation with wooden frame

### Frame and accessories
- Frame: Hard wood frame size 1.5 x 3 inches
- Connecting Tools: SCG Needle Point Screw 23 mm. or 1 inch nail
- Sealant Equipment: SCG SmartBoard Plaster Joint Compound
- SCG SmartBoard: Squared Edge 3.5 - 6 mm.

### Set - Up Instruction

1. Install hard wood frame size 1.5 x 3 inches. The distance between frame is 60 x 60 cm. with straight surface, no twisting.

2. Install SCG SmartBoard. The distance between SmartBoard is around 0.5 cm.

3. Tight the SmartBoard with SCG Needle point screw 23 mm. or 1 inch nail, 20 cm. apart.

4. For cornering, cut the SmartBoard oblique as the frame and tight with needle point screw.

5. Use SCG SmartBoard Plaster Joint Compound joint between SmartBoards, pull the cotton tape and leave it dry for 7 days.

6. Apply the primer and paint with Acrylic paint twice.

5 Fixing and Hanging objects

5.1 Fixing and Hanging objects

### Set - Up Instruction

1. Mark and Drill your desire point. Sunk butterfly-wing plastic hook into the ceiling or wall hole.

2. Drill the screw into the butterfly-wing plastic hook. When the screw is completely installed the butterfly-wing will be tightly fix with the SmartBoard.

3. Drill the screw into the butterfly-wing plastic hook.

4. When the screw is completely installed the butterfly-wing will be tightly fix with the SmartBoard.

### Suggestions
- Hanging devices can be fixed to both ceiling and wall by using the following accessories.

### Table: Ceiling Fixing

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Accessory</th>
<th>Maximum Weight Stand (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCG SmartBoard</td>
<td>3.5 mm. thick</td>
<td>Ceiling butterfly-wing plastic hook PT - 5 with drilling screw</td>
<td>5</td>
</tr>
<tr>
<td>SCG SmartBoard</td>
<td>4 mm. thick</td>
<td>Ceiling butterfly-wing plastic hook PT - 5 with drilling screw</td>
<td>7</td>
</tr>
<tr>
<td>SCG SmartBoard</td>
<td>6 mm. thick</td>
<td>Ceiling butterfly-wing plastic hook PT - 13 with drilling screw</td>
<td>10</td>
</tr>
<tr>
<td>SCG SmartBoard</td>
<td>8 mm. thick</td>
<td>Wall butterfly-wing plastic hook PT - 13 with drilling screw</td>
<td>80</td>
</tr>
</tbody>
</table>

### Recommendations
- Use the table below to estimate the weight bearing level of different thicknesses and usage of SmartBoard.
- When hanging heavy weight objects, it is advised to fix your object in the position that is on the stud, the maximum weight stand will also vary depending on the strength of different studs.
3.2 SCG SmartBoard Maintenance

Installation Procedure

• In case of Minor Damage (Less than 2cm. crack)

1. Use electric saw to cut out the damage area.
2. Fix the C-line frame with SCG self-drilling screws, 1.5 cm. from the edge of the crack and fix another screw 3.5 cm. to both sides.

• In case of Moderate Damage (2 - 5 cm. crack)

1. Cut C-line frame 10 cm. longer than the crack on each side.
2. Insert the C-line frame from behind by using string before drilling the SCG Needle Point Screw 23 mm.
3. Apply the cotton tape in the form of a cross over the crack then apply two layers of SCG SmartBoard Plaster Joint Compound, polish with sand paper, and apply coat of color.

• In case of Major Damage (More than 5 cm. crack)

1. Use electric saw to cut out the damage area.
2. Fix the C-line frame with SCG self-drilling screws, 1.5 cm. from the edge of the crack.
3. Fix the SmartBoard with SCG self-drilling screws. Apply the cotton tape then apply two layers of Smart Plaster, polish with sand paper, and apply coat of color.

SmartBoard Cutting and Drilling

Tools and Accessories

- Cutting Tool: Electric Fiber cutter (4 inch size) or cutter with 1 inch wide-blade
- Drilling Tool: Drilling Machine
- Grinding Tool: Sandpaper, file

Set-Up Instruction

To cut with electric cutter: suitable for SmartBoard in every size (3.5 - 12 mm.)

1. Use the electric fiber cutter (4 inch size) cut the SmartBoard according to the set line.
2. Trim the edge with sandpaper.

To cut with cutter: suitable for SmartBoard 3.5 - 4 mm

1. Use the cutter to rip on the set line several times until the trace is 1 of 3 deep in SmartBoard thickness.
2. Lever cut SmartBoard (Don't press, or else the edge will not smooth) and trim the edge with sandpaper.

To drill Smart Board

1. Drill small hole continuously with electric drilling machine according to the set line. Use the hammer knock the unwanted piece to come off.
2. Trim the edge with a file and smooth with sandpaper.
### Tool and Equipment

#### Leveled Equipment
- Level
- Net
- Plumbat

#### Drill, Cut, Drive, Hold Equipment
- SCG Needle Point Screw
- SCG Self Drilling Screw
- SCG Self Drilling Wing Screw
- SCG Butterfly-wing plastic hook
- Drilling Machine
- Hammer
- Cutter (for 4mm thickness)
- Electric Fiber cutter

#### Metal Frame
- Galvanized iron metal frame for T-Bar ceiling
- Structure steel metal wall frame
- SCG SmartBoard C-74, U 76, Galvanized Frame

#### Patching Material and Equipment
- SCG SmartBoard polyurethane joint sealant
- SCG SmartBoard Acrylic Joint Compound
- SCG SmartBoard Plaster Joint Compound
- Stainless trowel (11 inch)
- Stainless trowel (6 inch, 8 inch)

### 6. Placing Ceramic Tiles on SmartBoard

#### Frames and Accessories
- Jointing Substance: Tile Adhesive Cement
- SCG SmartBoard: Squared Edge with 8 - 12 mm. thickness

#### Set-Up Instruction
1. Prepare the surface of SmartBoard by cleaning and applying primer, then leave it dry.
2. Use the trowel to spread Tile Adhesive cement on all area of SmartBoard.
3. After soaking tiles in the water, make it nearly dry before placing on SmartBoard.
4. Place all tiles on SmartBoard. Leave it dry for 7 days for stable setting purpose. Then, joint the gap between tiles by filling Tile Adhesive sealant (Different type from Tile Adhesive cement).

#### Suggestion about Placing ceramic tiles on SmartBoard
It is our recommendation not to do it on the panel which is over 5 meters long. In such case, technical discussion in details with us is needed.
SCG SmartBoard Equipments for installation

**Tools and Equipment**

- **SmartBoard Cutting and Drilling**
  - **Ceiling Installation**
    - 1.1 Space lining ceiling installation with wooden frame
    - 1.2 Space lining ceiling installation with metal frame
    - 1.3 Concealed Ceiling Installation
    - 1.4 T-Bar Ceiling Installation
    - 1.5 Curved Surface Installation
  - **Partition Installation**
    - 2.1 Space Lining Extream Partition Installation
    - 2.2 Inner Space Lining Wall Installation
    - 2.3 Inner Concealed Edge Wall Installation
    - 2.4 Bended Wall Installation
  - **Flooring Installation**
    - 3.1 Space Lining Extream Partition Installation
    - 3.2 Inner Space Lining Wall Installation
    - 3.3 Inner Concealed Edge Wall Installation
    - 3.4 Bended Wall Installation
  - **Fixing and Hanging objects**
    - 5.1 Fixing and Hanging objects
    - 5.2 SCG SmartBoard Maintenance
  - **Placing Ceramic Tiles on SmartBoard**

**SCG SmartBoard C-74, U 76 Galvanized Frame**

- Thick steel material providing strength, safety, and manufactured in accordance with TIS.863-2532 with full thickness of 0.55 mm.
- Economic section with 45, 47 mm width frame section, which will not require to make the support for the frame in the joint area between SCG SmartBoard panel, and will reduce the time and labor for installation. The material is endued for corrosion or rust, and the surface is coated by Hot Dip Galvanized Steel 220.
- Coated by specially thick surface to prevent rust or corrosion.

**SCG SmartBoard Cutting and Drilling**

- **Ceiling Installation**
  - 1.1 Space lining ceiling installation with wooden frame
  - 1.2 Space lining ceiling installation with metal frame
  - 1.3 Concealed Ceiling Installation
  - 1.4 T-Bar Ceiling Installation
  - 1.5 Curved Surface Installation

**Partition Installation**

- 2.1 Space Lining Extream Partition Installation
- 2.2 Inner Space Lining Wall Installation
- 2.3 Inner Concealed Edge Wall Installation
- 2.4 Bended Wall Installation

**Flooring Installation**

- 3.1 Space Lining Extream Partition Installation
- 3.2 Inner Space Lining Wall Installation
- 3.3 Inner Concealed Edge Wall Installation
- 3.4 Bended Wall Installation

**Fixing and Hanging objects**

- 5.1 Fixing and Hanging objects
- 5.2 SCG SmartBoard Maintenance

**Placing Ceramic Tiles on SmartBoard**
SCG SmartBoard is a new generation fiber-cement material which produces using Firm & Flex Technology that give strength, durability, and elasticity all in one. SCG SmartBoard is made from Elephant Portland Cement, Silica, and Special Cellulose to Autoclave system specially designed for ceiling, wall, and flooring. Recommended for internal and external applications.

### Special Properties

**Firm**
- High impact strength
- Made from Elephant Portland Cement, Silica, and special cellulose without asbestos which make flexible with strong integrity.

**Water-Resistant and Non-decay**
- Long-lasting resistance to water, rain, and sun without destroying (US Standard AC50) standards in area.

**Resistant to Termite**
- Sensitive area made for SCG SmartBoard because it is made from Elephant Portland Cement (not asbestos) and special cellulose will work together, which make termites and insects harmless to SCG SmartBoard.

**Flexibility for all design**
- No need for plastering or finishing and with different thickness can be used for different thickness.

**Light weight easy to install and customization your design**
- SCG SmartBoard walls can be designed to suit any space of your desire without any steel beam reinforcement because they are 6 times lighter than traditional brick walls. Traditional brick wall average weight 180 kg/sqm. SCG SmartBoard wall average weight 30 kg/sqm.

**Good heat resistant for comfort homes**
- SCG SmartBoard has less than two times heat conductivity than ordinary fiber cement (ASTM C117 Standard) that reduces heat transfer from the under roof gap. Reduces indoor temperature and saves energy.

**Recommendation on lifting and moving**
- Lifting or moving of products shall be carried out with special attention and avoid continuous work in long period in order to protection the injury or fatigue. The operator shall drop oneself on knee and firmly hold the product every time that perform the lifting. Then use his leg power to lift by holding at 30 cm distance from the panel edge of SCG SmartBoard.

**Storing Tips**
- Should be stored in dry levelled floor on a palette or 1.5 x 1.3 m wood laid with a span of 60 cm.

**Product series and dimension**

<table>
<thead>
<tr>
<th>SCG SmartBoard</th>
<th>Thickness (mm)</th>
<th>Width x Length (sqm.)</th>
<th>Weight (kg/pc.)</th>
<th>Effective Area (sqm.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Squared Edge</strong></td>
<td>3.5</td>
<td>60 x 240</td>
<td>7.6</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>60 x 240</td>
<td>1.6</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>60 x 120</td>
<td>4.4</td>
<td>1.40</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>60 x 120</td>
<td>8.7</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>60 x 120</td>
<td>17.4</td>
<td>0.35</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>60 x 240</td>
<td>26.1</td>
<td>0.35</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>120 x 280</td>
<td>40.2</td>
<td>0.35</td>
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<td></td>
<td>10</td>
<td>120 x 240</td>
<td>43.5</td>
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<tr>
<td></td>
<td>12</td>
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<td>53.2</td>
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<td></td>
<td>16</td>
<td>120 x 300</td>
<td>69.6</td>
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<td>18</td>
<td>120 x 240</td>
<td>87.0</td>
<td>0.28</td>
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<td></td>
<td>24</td>
<td>120 x 240</td>
<td>78.3</td>
<td>0.35</td>
</tr>
</tbody>
</table>

**Sanded Edge and Tapered Edge**
- 60 x 240
- 60 x 120
- 120 x 280
- 120 x 300

**Floor Underlay**
- For underfloor equip, terminate floor and subfloor to reduce noise, moisture, and sound.

**Ceiling**
- For permanent panels that need to be repaired for fast, safe, and easy installation, long lasting, fire resistant, and sound resistant.

**Drywall**
- For interior living room, or office, the panels are the best to improve the level of comfort.

**Decorative Wall**
- Individual design/Interior/Exterior design.

**Deco Board**
- 4 x 10 mm

**Back Board**
- Solution for kitchen or bathroom walls, with strong load bearing and still be resistant to impact, tensile and impact.

**Floor**
- Rw 50KVA (Universal Build) suitable for use on a palette or floor.
**Specification for Installation of SCG SmartBoard fiber cement board**

- **Caution**
  - Do not use as any building's structure or other purposes. The installation shall follow the Installation Manual and use only the standard equipments made by producer.
  - Do not eat, avoid the smelling.

- **Attention to avoid danger**
  - The Products of SCG SmartBoard are designed, while the operation methods are specified to suit with the working condition in Thailand only. Any application outside Thailand is considered to be the direct responsibility of the designer, construction supervisor, and installer.

  **For Designer**
  - All properties shown in this document are the average values from the testing of products which are in accordance with the specified standards by sampling the products during period before the product distribution. Any transportation, application, or any procedures relating to the products such as exposing the products to the sunshine or submerging in water in long period shall result in altering of product properties.
  - Specifications for any installation are only the basic recommendation for general application. The Method for Installation and applied structure shall consider from the standard code of building in such country, and shall be direct responsibility of designer and supervisor.

  **For Installer and User**
  - Specifications for any installation are only the basic recommendation for general application. The Method for Installation and applied structure shall consider from the standard code of building in such country, and shall be direct responsibility of designer and supervisor.
  - Application of product which is not specified in the Installation Manual shall be direct responsibility of designer and installation supervisor.

- **Recommendation for Safety Operation**
  - SCG SmartBoard has composed by the silica. Cutting, grinding, drilling, or polishing of the product shall result in flying dust. If any person accidentally eat or inhale in a considerable amount or in long period it shall harm the respiratory system or body of that person.
  - The cutting, grinding, drilling, or polishing of the product shall carry out in good ventilated area, and avoid to use the machine for cutting, grinding, drilling, or polishing of the product which resulting in high amount of dust.
  - Wear the Personal Protection Equipment which is in accordance to the standards, such as dust protection mask, safety goggle, clothes, glove, shoe, etc.
  - Not allow any person who does not wear the Personal Protection Equipment which is in accordance to the standards, or any person who is not concerning with the work into working area in order to avoid any possible accident or injury.
  - Lifting or transportation of products shall be carried out with special attention. Do not bend down or twist oneself or change direction during lifting, and avoid working continuously in long period in order to avoid injury and fatigue.
  - The person who has to perform lifting must carry out by lowering oneself and hold the products firmly, then apply legal power to lift.
  - Cleaning of the working area after complete the cutting, grinding, drilling, or polishing of the product shall be carried out by vacuum machine, then the dust container shall be sealed completely, or cleaned by water. Do not sweep because this can cause spreading of dust.
  - Separate and collect the debris occurred from installation, reparation, dismantle of products with special attention, and eradicate with appropriate methods which specified by government service.
  - Clean oneself body with clean water after complete the cutting, grinding, drilling, or polishing of the product.

  **First Aid**
  - If the dust or any material debris accidentally entered the eye, do not scrub or crush. Clean with clean water several times, and consult the physician immediately.

**Verify that all methods are following the most update of Installation Manual of Products**

Installation Manual of Products is always updated. The designer, construction supervisor, and installer shall verify that all methods being used are following the most update of Installation Manual of Products. They can confirm by the website: www.siamfibrecement.com