

# FIBREGLASS REINFORCED POLYMER (FRP)

ADVANCED COMPOSITE FRP ROOFING  
SHEETS THAT MEET YOUR NEEDS

 **VERMAX<sup>®</sup>** LITE







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PLASTICS  
*delivering solutions*

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YOUR COMPLETE  
TRANSPARENT AND TRANSLUCENT  
POLYMER SHEET SOLUTION



## FIBERGLASS REINFORCED POLYMER (FRP)

Vermax® Lite brand of translucent fiberglass reinforced polymer (FRP) roofing and wall cladding is specially developed based on the highest quality and technological standards.



Only the best quality materials are used in our composites like non-alkali chopped strand fiberglass mat for added strength, UV inhibitor infused resins for longevity and weathering performance, as well as DuPont Melinex lamination film for a long lasting aesthetic finish.

Vermax® Lite translucent FRP sheets come in several grades for different user requirements, from general purpose to fire retardant grades.







## ADVANTAGES OF USING VERMAX® LITE FRP TRANSLUCENT ROOFING SHEETS



- Natural day light saves energy consumption and lighting maintenance. Moreover, it lowers energy consumption.



- Lowering heat transmission into building helps create good working atmosphere and energy bill.



- Luminance appropriate to activity in the building which may directly affect efficiency and productivity.



- Vermax Lite translucent sheets are manufactured from premium raw materials by state of the art machinery.



- Manufactured by fully automatic machine with latest technology



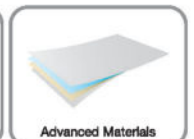
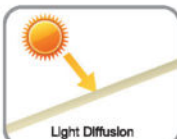
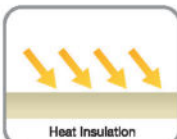
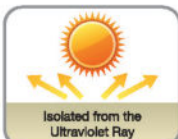
- SIRIM tested quality



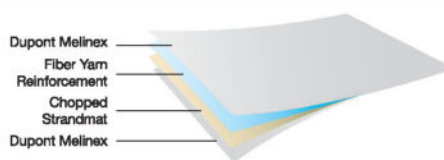
- Quality raw materials from world renowned sources



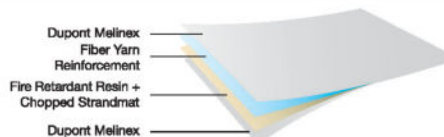
- Provide superior light diffusion



# PRODUCT RANGE



|                      |                                                                                                                                                                                                                                                                                                                                         |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Main Features</b> | 1) General purpose FRP Skylight roofing sheets<br>2) Provides natural lighting with maximum light transmission and saves energy consumption<br>3) Utilisation of chopped strand mat with fibre yarn underlay for maximum strength<br>4) UV resistant coating layer on top and bottom surfaces for longer lasting clarity and appearance |
| <b>Application</b>   | Industrial buildings and warehouses, large stores, stadiums, residential communities and etc                                                                                                                                                                                                                                            |
| <b>Warranty</b>      | Up to 15 years                                                                                                                                                                                                                                                                                                                          |



|                      |                                                                                                                                                                                                                                                                                                                       |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Main Features</b> | 1) Flame retardant properties<br>2) Provides natural lighting with maximum light transmission and saves energy consumption<br>3) Utilisation of chopped strand mat with fibre yarn underlay for maximum strength<br>4) UV resistant coating layer for top and bottom surfaces for long lasting clarity and appearance |
| <b>Application</b>   | Steel plants, blast furnaces and other factories that needs to meet fire retardant requirements                                                                                                                                                                                                                       |
| <b>Warranty</b>      | Up to 15 years                                                                                                                                                                                                                                                                                                        |

| Product Category                                      | VERMAX <sup>®</sup> LITE PREMIER                                                            | VERMAX <sup>®</sup> LITE FR ULTRA                                                           |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <b>Description</b>                                    | Weather resistant, high durability, good impact resistance and high light transmission rate | Weather resistant, high durability, good impact resistance and high light transmission rate |
| <b>Water Absorption 24 hrs</b>                        | 0.18%                                                                                       | 0.18%                                                                                       |
| <b>Fibreglass Content</b>                             | ≥26%                                                                                        | ≥26%                                                                                        |
| <b>Nominal Thickness</b>                              | 1.2mm, 1.5mm, 2.0mm, 2.3mm, 2.6mm                                                           | 1.2mm, 1.5mm, 2.0mm, 2.3mm, 2.6mm                                                           |
| <b>Heat Resistance Limit</b>                          | -40°C ~ +130°C                                                                              | -40°C ~ +130°C                                                                              |
| <b>Light Transmittance</b>                            | Opal 40%, Blue 72%, Natural color 82%                                                       | Opal 40%, Blue 72%, Natural color 82%                                                       |
| <b>Anti-Ultraviolet Rate</b>                          | ≥99%                                                                                        | ≥99%                                                                                        |
| <b>Thermal Expansion Coefficient</b>                  | 2.1, 10 <sup>-5</sup> m/m°C                                                                 | 2.1, 10 <sup>-5</sup> m/m°C                                                                 |
| <b>Flexural Strength</b>                              | 198 MPa                                                                                     | 198 MPa                                                                                     |
| <b>Tensile Strength</b>                               | 81.5 MPa                                                                                    | 81.5 MPa                                                                                    |
| <b>Density</b>                                        | 1.449 /cm <sup>3</sup>                                                                      | 1.449 /cm <sup>3</sup>                                                                      |
| <b>Barcol Hardness</b>                                | 49                                                                                          | 49                                                                                          |
| <b>Heat Distortion Temperature at Stress 1.80 MPa</b> | 215°C                                                                                       | 215°C                                                                                       |
| <b>Thermal Conductivity</b>                           | 0.158W/M.K                                                                                  | 0.158W/M.K                                                                                  |

| Series  | Thickness |
|---------|-----------|
| 1800gsm | 1.2mm     |
| 2400gsm | 1.5mm     |
| 3050gsm | 2.0mm     |
| 3660gsm | 2.3mm     |
| 4270gsm | 2.6mm     |

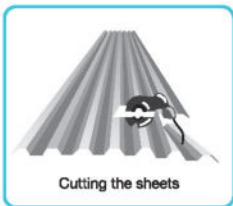


# **VERMAX®** LITE INSTALLATION GUIDE



## Handling and Storage

1. Transport and storage Vemax® Lite Roofing Sheets horizontally on flat.
2. Avoid storing unwrapped Vemax® Lite Roofing Sheets.
3. Short Vemax® Lite Roofing Sheets should be stacked on top of longer ones. Do not stack up more than 1 meter in height.
4. Store Vemax® Lite Roofing Sheets in a cool, dry and shaded place, protected from direct sunlight. Avoid covering the stacks of Vemax® Lite Roofing Sheets with dark or heat-absorbing materials or objects, to prevent solar heat build-up.
5. Recommended handling:
  - a) Protect the sheets from any physical damage.
  - b) Avoid stepping on the panel when it on the ground.
  - c) Avoid folding panels across the corrugation during handling and installation.
  - d) Do not drag the Vemax® Lite Roofing Sheets on the ground or scrape them against structural elements or other rough objects.



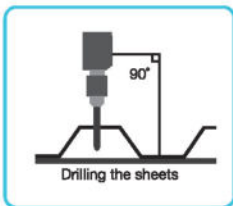
## Processing

### 1. Cutting

- a) Use fine-toothed tenon saw.
- b) Power saws with abrasive cutting-off wheel or circular saw blade suitable for cutting Vemax® Lite Roofing Sheets.
- c) Jig saw with suitable blade may be used as well.

### 2. Drilling

- a) Pre-drill the required fixing holes to at least 4-5 mm larger than the diameter of the screw used. (e.g. Diameter of screw 4mm, hole drilled require minimum 8mm or larger).
- b) Power drill may be use at LOW SPEED and the drill bit must be ground to suit the Vemax® Lite Roofing Sheets.
- c) Avoid drilling hole by punching.
- d) Drilling vertically at 90°.



## Installation Guide

| Building Configuration                 | Internal Wall Colour | Usage %                      |                             |
|----------------------------------------|----------------------|------------------------------|-----------------------------|
|                                        |                      | Light Transmission Rate >70% | Light Transmission Rate 50% |
| Industrial building (Roof height <15m) | Light                | 10%                          | 19%                         |
|                                        | Dark                 | 12%                          | 17%                         |
| Industrial building (Roof height >15m) | Light                | 12%                          | 17%                         |
|                                        | Dark                 | 15%                          | 21%                         |
| Warehouse                              | Light                | 10%                          | 14%                         |
|                                        | Dark                 | 12%                          | 17%                         |
| Greenhouse                             | -                    | 100%                         | -                           |

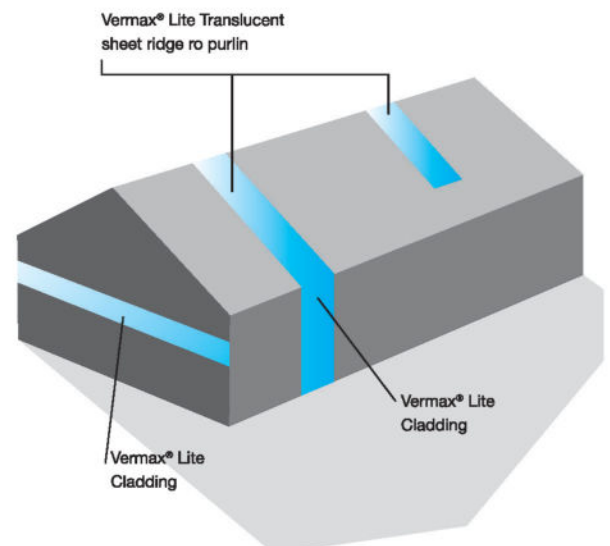
For reference purposes only. Usage are under normal conditions.

## Recommended Thickness and Maximum Span

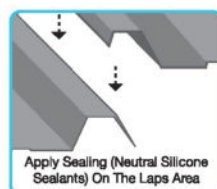
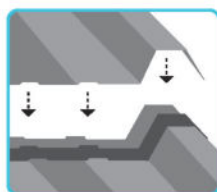
| Profile rib height (mm) (x) | Thickness / Purlin spacing |        |        |
|-----------------------------|----------------------------|--------|--------|
|                             | 1.2mm                      | 1.5mm  | 2.0mm  |
| 20 < x < 45                 | 1200mm                     | 1500mm | 1700mm |
| x > 45                      | 1500mm                     | 1700mm | 1900mm |

In consideration of wind load and strength requirements, recommended purlin spacing as per table above. This information is for reference only.

## Recommended Installation



## Roof Details



### 1. Pitch

- The minimum recommended roof pitch for Vermax® Lite Roofing Sheets application is 6° slope
- For roof pitch less than 10° (1:5.6) apply full sealing system (Neutral Silicone Sealants) on all lapping and drilled holes.

### 2. Positioning

- Lay Vermax® Lite Roofing Sheets on the metal roof of both side
- Vermax® Lite Roofing Sheets must be located and installed without any stresses. Do not pull, stretch or force the sheets when the profiles are not perfectly matched.

### 3. Overlaps

- Recommended longitude overlap of minimum 300mm above purlin.
- Each Vermax® Lite Roofing Sheets to extend 150mm or over the fixings line along the purlin.
- Recommended apply two runs of sealing (Neutral Silicone Sealants) on both sides of fastener line or one sided foam tape.

### 4. Fastening

- Pre-drill 8mm or more holes at the screw points.
- Fasten screws on every purlin from the lower end towards the upper end sequentially, starting always from the same side.
- Always fasten through the ribs of the Vermax® Lite Roofing Sheets. Do not fasten screw on the valley.
- The screws should be tightened moderately, without deforming the washer and distorting the Vermax® Lite Roofing Sheets. Careful attention should be given to assure perpendicular insert of the fasteners.
- Excess tightening and oblique insertion will distort the Vermax® Lite Roofing Sheets, induce undue internal stresses, leading to fracture and cracks, eventually ending in failure.
- Screws fasten positioning vertically at 90°. Screws fasten position at the center of the pre-drill hole and not the side or corner of the pre-drill hole.
- Do not fasten screw at the side or corner of the ribs.
- Never use an impact wrench or driver for fastening Vermax® Lite Roofing Sheets. Tighten by hand or by an adjustable torque power screwdriver.
- Do not use Drive Screw, Nails or Pop Rivets.

### TECHNICAL ADVICE:

If you are doubtful over the fixing and installation method, please contact our Project Technician or Marketing personnel for proper advice and assistance.

### MANUFACTURER'S LIABILITIES:

The information contained in this brochure is to our best knowledge, accurate and proper, but all the recommendations are made Without Guarantee. Since the conditions of use at work site are beyond our control, we therefore Hold No Liabilities for any mishandling and workmanship defects in using our skylight materials.



## PROJECT REFERENCE



Paper Mill Factory  
Banting, Selangor



Logistic Hub  
Shah Alam U10



Glove Factory  
Klang



Condominium  
Recreation Area  
Klang



Factory  
Melaka









 **VERMAX<sup>®</sup> LITE**  
Advanced Composite  
FRP Louvres Systems



## TRANSLUCENT LOUVERS

### Product Specification:

|                    |                                                                      |
|--------------------|----------------------------------------------------------------------|
| Profile Available  | : Type 400 & Type 300                                                |
| Color              | : Blue, Natural, Opal, Clear (Green)                                 |
| Width              | : Standard 6meters ( custom sizes available, transport permitting )  |
| Thickness          | : 1.2mm (1,800 Gram Square Meter)<br>1.5mm (2,480 Gram Square Meter) |
| Length             | : Cut to size-Maximum 6 meter                                        |
| UV Resistant Rate  | : 99%                                                                |
| UV Resistant Film  | : Dupont Melinex                                                     |
| Light Transmission | : 75% +/-                                                            |

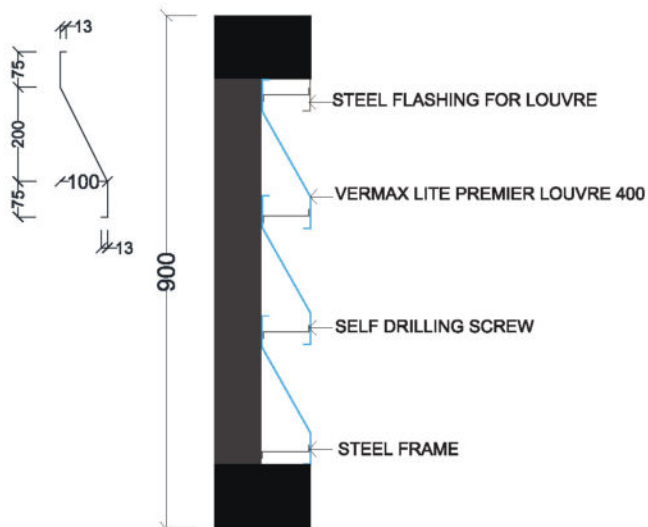
### Feature & Benefit

#### 1. Allow air ventilation into buildings

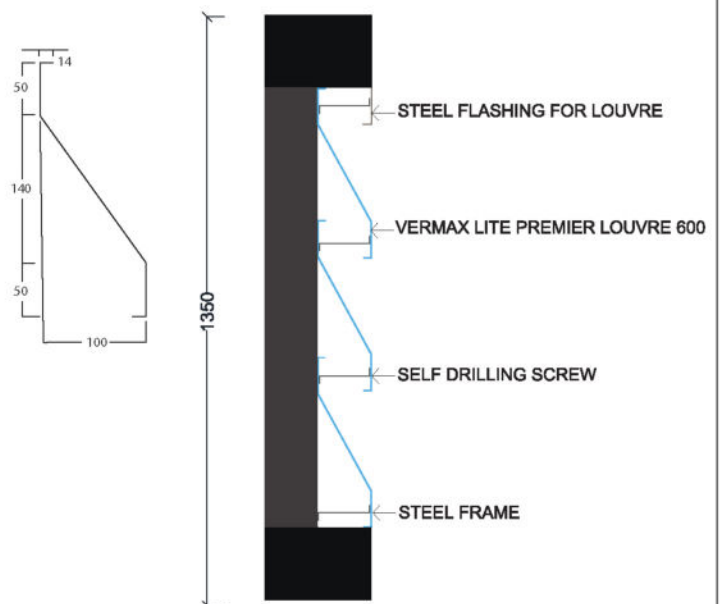
- i) Allow beneficial air circulation for large commercial and industrial buildings increasing comfort level and productivity.

#### 2. Allow natural light into buildings

- i) Offer savings from reduced lighting cost and improves indoor air quality.



**TYPE 400**



**TYPE 300**

