COMPANY PROFILE

ONDULINE® was founded in 1950 to manufacture and market the now famous corrugated roofing sheets. The outstanding growth and success of ONDULINE® in the last 60 years has seen the company become the world’s largest manufacturer of corrugated composite sheets made of recycled cellulose fibres, bitumen and resins and a leading supplier of lightweight roofing systems. The growth is based on our commitment to customer requirements, supported by ongoing product and roofing system development to provide assured cost-effective roofing solutions.

The ONDULINE® group employs 1300 people in its 11 production plants and 40 sales offices across the world. Its products are distributed in more than 100 countries. ONDULINE® does its utmost to serve its 16000 clients, dealers in building materials, its tens of thousands of product consultants, as well as hundreds of thousands of users.

Our exclusive and patented technology allows the production of composite roofing sheets made of recycled cellulose, high-grade bitumen and thermoplastic resins which today cover millions of square meters of roof surfaces all over the world. The ONDULINE® group has also pursued a diversification strategy by developing other bitumen-based products, extruded plastics, polycarbonate, PVC and polyester sheets in order to improve its range of roofing and weatherproofing systems and meet the increasing needs of its customers.

"MORE THAN 100 COUNTRIES ACROSS THE GLOBE"
WHY IS IT GREEN?

50% Post Consumer Recycled Content Materials

- The product is manufactured from recycled fibre. The Onduline Group worldwide recycles 200,000mt of fibre annually. The manufacturing location (12 factories around the world, 1 in Asia which is located in Penang) is equipped with treatment system for gas effluents, and does not jettison liquid waste in any form as per ICC-ES Evaluation Guideline for Determination of Recycled Content of Materials (Report No:VAR-1016).

Thermal Resistance (Insulation)

- Thermal resistance K value of 5.606 W/m²K and R value of 0.178 m²°C/W (SRIM QAS).
- Thermal Conductivity: 0.099 W/mK (LNE France:Certificate no.7070918 D MAT/7).

Acoustic Insulation

- Reverberation coefficient (max) 0.4 to 315Hz (CEBTP No. 2312.6.244/1).
- Sound attenuation coefficient (max) Rw=28dB (CSTB C/65/CL/1896/1).

PRODUCT FEATURES

- Isoline Under-roofing system is a special waterproofing sheet applied under the roofing tiles/sheets (clay, concrete, shingles, metal etc.). An airspace resides beneath the Isoline gutter. This space helps to discharge the vapor inside the building before it condenses, creating an air circulation over the heat insulation material.
- The flow of air created among the roof tiles/sheets and Isoline allows rapid drying of roof tiles/sheets. Roof tiles/sheets are laid into special battens fixed to the Isoline sheet.
- Isoline Under-roofing system forms an effective secondary weatherproof layer, incorporated into the design of tiles/sheets roofing.

The core advantage of using Isoline are as follows:

- Allow low pitch applications for all types of roofing tiles/sheets.
- Security against break-in through roof.
- Improved thermal Insulation.
- Improved ventilation, result in longevity of roof.
- Improve Sound Absorbency.
- Weatherproof secondary under roof.

PRODUCT COMPLIANCE

- Reduced Carbon footprint at production as assessed by Ellen Carbone (ADEME Carbon footprint, ISO 14064, GHG Protocol).

APPLICABLE GB1 CREDITS

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<td>RNC</td>
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ECO RESPONSIBILITY

You can count on total regulatory compliance with building codes. And when it comes to meeting high standards, ONDULINE® solutions work just as hard for the environment...

- ONDULINE® has achieved a low carbon footprint and recycles some 200,000 tons of material each year.
- Natural pigments are used for coloration.
- Products contain no traces of asbestos.
- Materials composed of recycled fibres, verified by a third party (ICC-ES). whose certificates can help for LEED.
- Ecological lifecycle performance.
INTRODUCTION

ISOLINE® UNDER-ROOFING SYSTEM

ISOLINE® is a special weatherproofing sheet applied under the roof tiling. It is compatible with all type roof tiles. An air space resides beneath the Isoline gutter. This space helps to discharge the vapor inside the building before it condenses, creating an air circulation over the heat insulation materials.

Additionally, the flow of air created among the roof tiles and Isoline allows rapid drying of roof tiles. Roof tiles are laid into the special battens fixed to the Isoline sheet. An aesthetically appealing look is thereby obtained with easy and fast workmanship. The system’s applications is very easy and compared with full deck roofing systems this application technique availed by the highly strong structure of ISOLINE®.

The ISOLINE® Under-Roofing System forms an effective secondary weatherproof layer, incorporated into the design of tiles roofing.

CORE ADVANTAGES

ISOLINE® Under-Roofing System combines the benefits of roofing underlay, boarding and counterbattering in one system, providing enhanced ventilation and insulation. The core advantages are as follows:

- Allow low pitch applications for all types of roofing tiles.
- Security against break-in through roof.
- Improved ventilation, results in longevity of roof.
- Improved thermal-insulation.
- Improved sound absorbency.
- Weatherproof secondary under roof.

APPLICABLE FOR LOW-PITCH ROOFING SYSTEM

The minimum pitches/laps for tiles are normally specified by the manufacturer with reference to BS5534, Part 1 Design 1990. There are design situations, however, when these specifications cannot be attained i.e. The window line of the main building restricts the roof pitch of the extension. The use of ISOLINE® allows the same tile as used on the main roof to be used on the extension at a pitch below the manufacturer’s recommended minimum.

WATERPROOFING WARRANTY

10 YEARS

* Subject to technical requirements.
TROPICAL CLIMATE

INCREASED VENTILATION & THERMAL INSULATION
Unvented: Radiant heat penetrates roof sheath and attic, enters living areas of home.

Vented: With proper ventilation heat is vented out the attic, keeping living areas cooler.

ISOLINE® provides a constant air space of 17000 mm² per linear metre ventilation into the roof space and tile/batten cavity respectively. ISOLINE® produces a significant reduction in heat gain and loss through the roof structure. An estimated 25% of domestic energy is lost through the roof. The use of ISOLINE® offers up to 5% additional saving on energy costs.

INCREASED SOUND INSULATION
ISOLINE® gives a 27% reduction in sound penetration through the roof structure, compared to conventional roof construction.

SECURITY PROTECTED BY ISOLINE® UNDER-ROOFING SYSTEM AGAINST BREAK IN
ISOLINE® Under-Roofing system serves as an excellent security roofing system. It is used as a secondary layer roof which is light, stable and flexible, to prevent burglar from breaking in through the roof. It is also tested that it can sustain 0.9 tons per sqm pressure.
**ISOLINE®: EXCLUSIVE ADVANTAGES FOR YOUR ROOF**

**Does not contain asbestos**
Asbestos-Free, Safe and Healthy (Organic Material)
Asbestos has been classified as a cancerous material in 1977 by the International Agency for the Research on Cancer. Many countries in the world have already adopted new regulations accordingly. ISOLINE® not only does not contain asbestos but it also helps with the covering of those contaminated roofs that would be otherwise difficult and expensive to remove.

**High Insulation and Sound Absorbency Values**
Heat Insulation 8°-11°C below the Metal Roofing heat insulation
Thanks to its fibrous composition, ISOLINE® has one of the best thermal coefficients for products of similar thickness as well as extremely high sound absorption values. ISOLINE® is extremely effective against rainfall noises thus creating a unique living and working comfort in residential and commercial constructions. It also improves productivity factors in farm buildings.

**Easy to Transport and to Install; Durable and Strong**
- Ultimate Load until 920 kg/m²
- Strong wind until 180 km/hour
Thanks to ISOLINE® particular light and resistant structure, it is possible to minimize installation and transport costs making the whole roofing process more efficient. Once installed, in accordance with our fixing instructions, ISOLINE® needs very little maintenance.

**10 years warranty: Water proof / Leak proof**
Protection from rainwater and moisture is essential on a roof. ISOLINE® with its watertight structure allows all this, increasing considerably the roof lifespan. Besides, ISOLINE® corrugations also provide an ideal ventilation of the structure therefore limiting the formation of moisture. ISOLINE® waterproof is guaranteed 10 years (Subject to technical requirements).

**Only 6.5 kg per sheet of 1.9m²**
Lightweight only 6.5 kg / sheet (<4 kg per m²)
ISOLINE® sheets are very light and easy to carry. This important feature is crucial for transport and for installation making the product ideal both for professional and DIY users.

**Environmental friendly**
It is free from chemical and made from recycled content material. Accredited by greenpagesmalaysia, MGBC as a green building product.

**Easy to cut, shape and fix**
ISOLINE® versatility allows easy cutting and shaping when it comes to eaves, ridges or roof ventilators. All you need is a saw, a hammer and our recommended nails to fix the product on most types of roofs.
**TECHNICAL DATA & CHARACTERISTIC**

- Resin + Pigment
- Exceptional Performances
- Thermosetting Resins & Pigment Layer
- Bitumen
- Homogeneous Base of Cellulose Fibre
- Thermosetting Resin for Double Protections
- High Grade Organic Bitumen & Cellulose Fibres

**PRODUCT DIMENSION & SPECIFICATION**

**ISOLINE® S**
- Length: 2000mm
- Width: 1010mm
- Thickness: 2.8mm +/-
- Corrugation Depth: 24mm +/-
- Pitch of corrugation: 49mm +/-
- Weight: 3.26kg/sqm
- No. of corrugation: 21
- Min Pitch: 15°

**ISOLINE® L**
- Length: 2000mm
- Width: 950mm
- Thickness: 3mm +/-
- Corrugation Depth: 38mm +/-
- Pitch of corrugation: 95mm +/-
- Weight: 3.42kg/sqm
- No. of corrugation: 10
- Min Pitch: 5°

Acts as an under-roofing system for all types of roofing materials, works with cement and clay tiles, etc.
RIDGECAP & HIP DETAIL

(A) Isoline/Onduline ridge capping

EAVES DETAIL

(A) Gutter
(B) Flashing
(C) Facial board

END WALL DETAIL

(A) Z-profile aluminium
(B) Flashing
(C) Onduband/Apron flashing

1) Roof trusses to manufacturer’s details.
2) 1st batten spacing distance is determined by
   2nd batten spacing of roof tile.
3) Underlay ONDULINE/ISOLINE roofing sheet to
   manufacturer’s details.
4) Counter batten.
5) 2nd batten at spacing specified by roof tile
   manufacturer.
6) Roof tiles & accessories to manufacturer’s details.

*For detailed technical fixing guidelines, please contact our technical department.
TECHNICAL DRAWINGS (TYPE B)

Verge Detail
(A) Onduband
(B) Facial board
(C) Verge tiles

Side Wall Detail
(A) Z-profile aluminium
(B) Flashing
(C) Onduband

Valley Detail
(A) Valley gutter
Legend:
1) Roof trusses to manufacturer’s details.
2) 1st batten spacing distance is determined by 2nd batten spacing of roof tile.
3) Counter batten.
4) Underlay ONDULINE/ISOLINE roofing sheet to manufacturer’s details.
5) 2nd batten at spacing specified by roof tile manufacturer.
6) Roof tiles & accessories to manufacturer's details.

*For detailed technical fixing guidelines, please contact our technical department.*
**ISOLINE® RIDGE**
Manufactured from the same material and to the same high specifications as Isoline sheets. Flexible double wings allow a wide range of roof angles.
Dimensions: 100cm x 48.5cm
Weight: 1.375kg

**SAFE TOP SCREW & NAIL**
The safe top bonded washer is resistant to UV radiation and with its weatherproof seal provides a superior resistance to wind uplift.
Dimensions: 65mm/70mm x 3.55mm
Weight: 7gram

**ONDUBAND**
Self-adhesive aluminium covered membrane of tile colour for rainwater gutters and detail solutions.
Width: 10cm/20cm
Length: 10m

**ONDULAIR**
Waterproof ridge ventilation tape
Width x Length: 29.5cm x 500cm/roll

**UNIVERSAL VENTILATED FILLER**
Preventing ingress of foreign materials and intrusions of birds through the eaves.
Width x Length: 9cm (incl. hatchet) x 100cm

**CORRUGATED EAVES FILLERS**
Black & white polypropylene foam to match the Isoline profile. Seals the corrugation at eaves and ridge. Boxes of 100 units.
Length: 95cm
Width: 2.3cm
Height: 4cm
Weight: 0.02kg

**Z PROFILE ALUMINIUM**
For fitting details
Length: 300cm

**GUTTER**
Made from good quality PU to support rain water load and transfer discharge to RWDP.
Radius: 15cm

**PROFILED VENT PIPE**
Same corrugations as Isoline products – easy to fix.
Black P.E (polyethylene)
Length: 88cm
Width: 4.8cm
Height: 79cm
Weight: 2.0kg

**APRON FLASHING**
Designed to seal the gap between Isoline sheets and vertical wall abutment.
Length: 93cm
Width: 19cm
Weight: 0.3kg