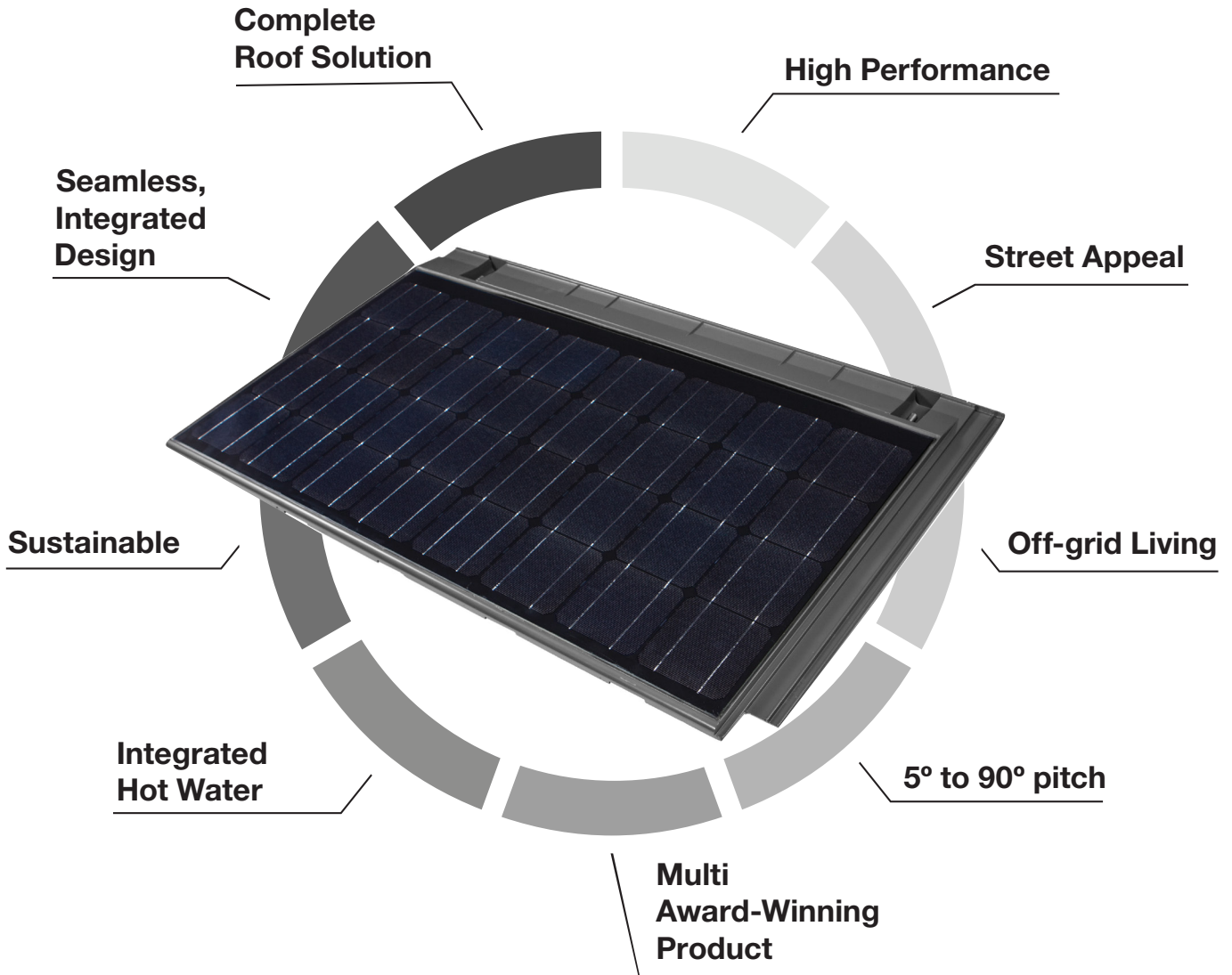


Tractile

DESIGN | PERFORMANCE | ENERGY | SUSTAINABILITY

Eclipse Solar Roof Tiles



The Designer Solar Roof



Sustainability



Best in Category



1800 00TRAC (8722)
tractile.com.au

Design Features

Large format flat profile tile

This design is a modern interpretation of classic slate tiles. Compared with standard roof tiles, the double height halves the lineal metres of roof battens, and being approximately 8 times larger are faster to install. The lightly textured surface is clear of any screw fixings, provides a natural look and improves surface grip for safety. The low profile tile edge is 18mm.

Hook & Batten fixing system

The patented interlocking design provides easy installation with no external screws penetrating the tile surface. In extreme weather, wind loads are more efficiently distributed into the building structure, preventing point loading and failures around screws or clips.

The hooks are 80% of the width of the tile to provide maximum fixing strength.

- a) Lower hook is the standard hook position for roof applications.
- b) Upper hook is optional for additional fixing strength and wall cladding applications.
- c) Additional batten is utilised under both Tractile Eclipse Solar and Eclipse Thermo Tiles to support the tile fins in addition to the hook fixing

Tile overlaps

The large overlapping design provides better protection, allowing application at lower pitches.

- a) Head and tail lapping zone is 130mm and incorporates unique geometry of a ramp, back wall, offset markings and baffles.
- b) Side lapping zone of the overlook and underlock is 55mm and incorporates vertical ribs to control water ingress. A special channel is provided for locating a silicone bead to seal at low roof pitches.

Photovoltaic module

Integrated into the tile creating a flush fitting surface with surrounding tiles.

Pipe channel

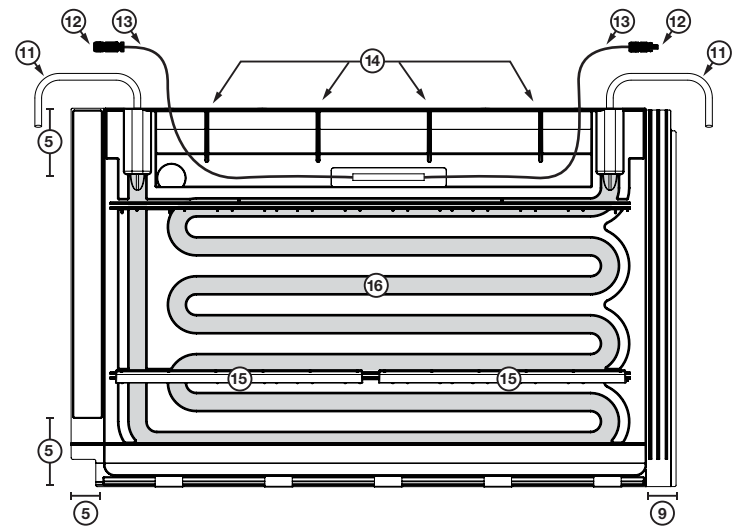
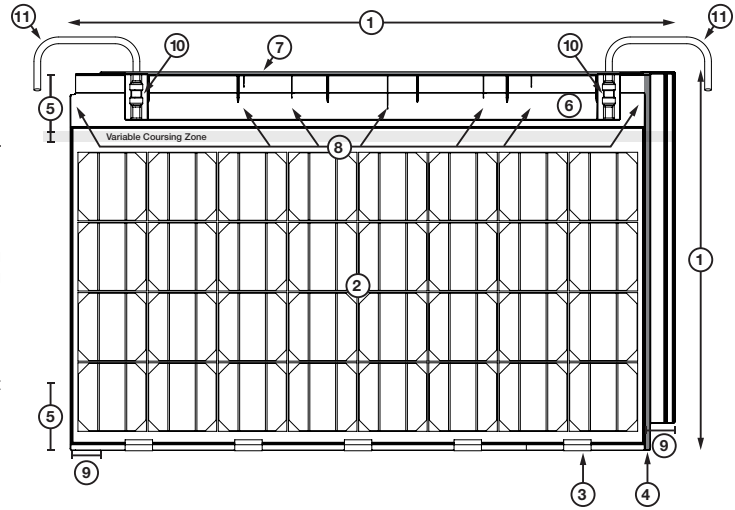
The integrated pipe channel is a heat exchanger.

Support fins

Resting on the metal batten and supporting the head of the tile, the fins provide space for additional materials such as insulation, electrical cables and plumbing pipes to be located above the truss and beneath the tile, shielding them from view and providing protection.

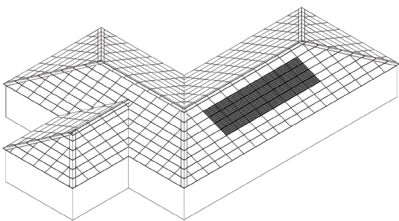
Key:

- | | |
|-------------------------------|-----------------------------------|
| 1. Double height & large size | 9. Side lapping |
| 2. Photovoltaic module | 10. SharkBite® push-fit connector |
| 3. Low profile tile edge | 11. Tractile 'U' copper pipe |
| 4. Silicone bead channel | 12. MC4 connector |
| 5. Head and tail lap zones | 13. Cable 600mm |
| 6. Ramp | 14. Support fins |
| 7. Back wall | 15. Lower hooks |
| 8. Offset markers & baffles | 16. Pipe channel |

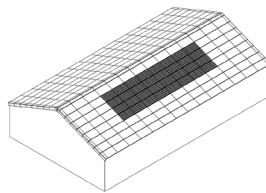


Unlimited Roof Designs

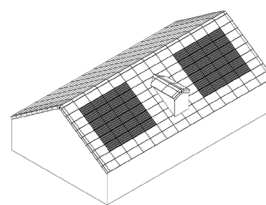
Hip and Valley



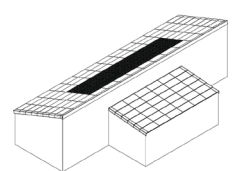
Open Gable



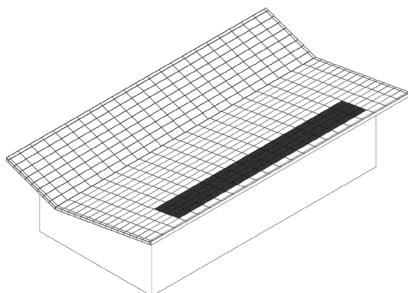
Open Gable with dormer



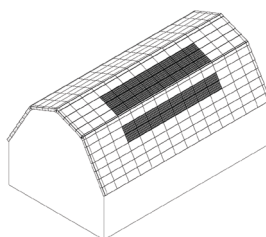
Skillion and Lean-to



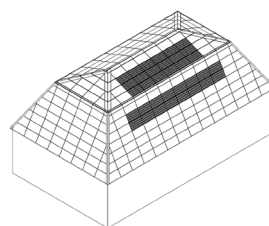
Butterfly



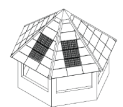
Gambrel



Mansard



Gazebo



Roof Integrated Photovoltaic Thermal (RIPV-T)

RIPV-T is an innovative solution to maximise the functionality of a roof tile, to provide a covering that also harvests energy for electricity and heated water.

Utilising advanced materials and technology, Tractile is a complex solution delivered in a simple package, that is suited to a wide range of architectural styles.

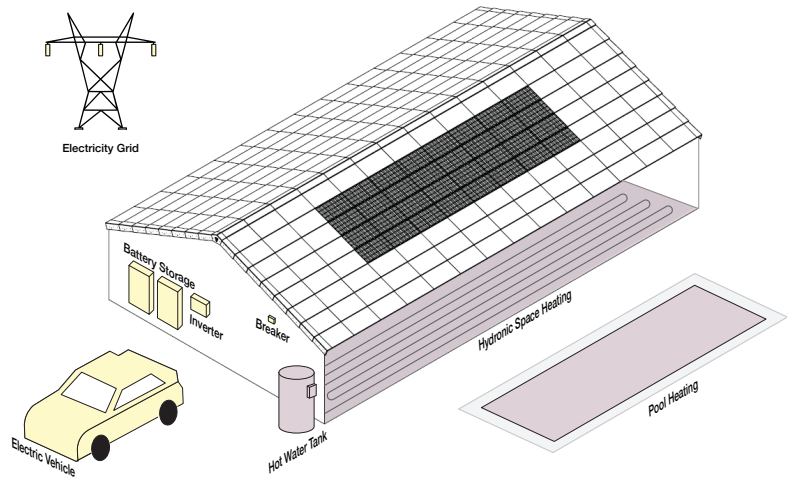
Traditional roofing and solar use photovoltaic modules applied onto a roof, over the existing roof material. While functional from an engineering perspective, the contrast of materials is not designer friendly, nor aesthetically pleasing.

The evolution is to integrate the photovoltaic modules with the roof. Whilst other solar roof tiles can suffer from overheating and therefore a reduction in electricity generated, Tractile solar roof tiles are cooled by the integrated water channels, which increases the electrical performance of the PV module, with the added benefit of pre-heating the water and reducing the heat load on the house.

The electricity and pre-heated hot water generated from the Tractile roof tiles can be used to meet the energy and hot water requirements of the owners such as:

- Powering electrical equipment
- Charging battery energy storage systems
- Charging electric vehicles
- Selling power to electricity grid
- Hot water systems
- Space heating systems
- Pool heating systems

Tractile Eclipse Solar Roof Tiles are designed to seamlessly integrate with the Tractile Eclipse Roof Tiles and the Tractile Eclipse Thermo Tiles as part of a complete high performance roofing solution.

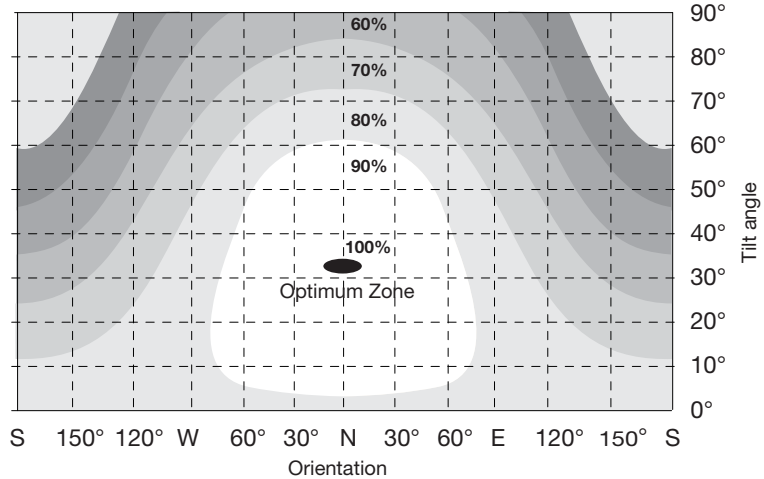


PV Specifications

98W Frameless PV Module

Panel Dimensions	H 1040 mm L 574 mm W 5 mm
Front Cover	3.2mm tempered glass
Back Cover	Tedlar / Kynar backsheet (black or white)
Cable Length	600 mm x 2 (cross sectional area 4 mm ²)
Connectors	MC4
Cell Type	Monocrystalline
Efficency	>20.4%
NOCT	45+/-2°C
Temperature Coefficient	Pmax: -0.42 %/°C, Voc: -0.34 %/°C, Isc: 0.05 %/°C
Operating Temperature	-40°C ~ +80°C
Power Tolerance	-3% ~ +3%
Pmp	98W
Isc	3.89A
Voc	34.22V
Imp	3.56A
Vmp	27.5V
Maximum System Operating Voltage	1000V
Certification	ISO 9001, ISO 14001, OHSAS 18001, CE, IEC 61215, IEC 61730 TUV certified
Performance Warranty	90% of power output for 10 years and 80% for 25 years

Orientation and tilt angle performance guide - Sydney, Australia



System Sizing

Tractile Eclipse capacity in kWp	Number of Eclipse tiles	Eclipse roof area in sqm	Yearly PV output in kWh	Yearly HW output in kWh	Total kWh/year
3	30	18	4380	1460	5840
5	50	30	7300	2433	9733
6	60	36	8760	2920	11680
10	100	60	14600	4867	19467
20	200	120	29200	9733	38933

*Outputs based upon average Australian solar irradiance conditions and PV performance of ~4kWh/kWp per day.

Electricity Usage

Average 4 person family in Australia uses 15-25kWh per day, or 5475-9125kWh per year.

Domestic Hot Water

The pre-heated hot water from the Tractile Eclipse Solar tiles can be utilised for domestic hot water via an integrated heat exchange hot water tank system.

Hydronic Space Heating

Tractile Solar Tiles are used in conjunction with hot water tank and heat pump technology.

Pool Heating

The pool's surface area equals the required area of solar roof tiles (-20% ~ +20%).

Electric Vehicles

A daily travel range of 55kms to 80kms can be charged from approximately 3kWp of PV (18sqm of Tractile Eclipse Solar Roof Tile).

Thermal Specifications

The performance of a solar thermal hot water system is dependent on:

- Solar irradiance
- Ambient temperature
- Wind speed
- Water inlet temperature
- Hot water tank
- Hot water consumption

The Tractile Eclipse range includes:

1) Eclipse Solar Roof Tile

This is a roof integrated photovoltaic thermal product producing both electricity and heated water. The balance between cooling the PV and heating water is controlled by the flow rate of circulating fluid through the tiles. High flow rates increase electricity outputs (by 7% - 12%) but reduce heated water. Low flow rates reduce electricity outputs but increase heated water. An optimal system wide temperature is 35°C to 40°C.

2) Eclipse Roof Tile

This is a modern large format composite roof tile that works seamlessly with the Tractile Eclipse Solar tiles. Offering many benefits over traditional stand-alone roofing products such as Category 5 cyclone and large hail resistant, BAL-40 rating and suitable for 5°-90° pitch installation.

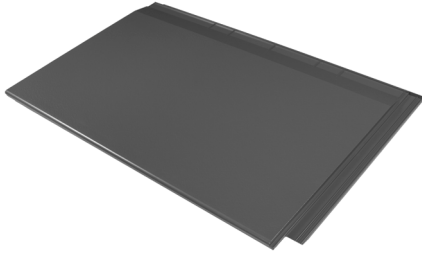
3) Eclipse Thermo Roof Tile

This is a roof integrated thermal product producing only heated water. These tiles are designed to maximise the solar thermal hot water output. An optimal system wide temperature is 55°C to 70°C.

Tractile Roof Components

Eclipse Roof Tile

Dimensions Physical
1100 mm x 690 mm x 71 mm
Dimensions Exposed
1050 mm x 565 mm
Coverage
1 tile = 0.593 sqm 1.6 tiles per sqm
Weight
8.10 kg



Eclipse Solar Roof Tile

Dimensions Physical
1100 mm x 690 mm x 71 mm
Dimensions Exposed
1050 mm x 565 mm
Coverage
1 tile = 0.593 sqm 1.6 tiles per sqm
Weight
19.56 kg
Photovoltaic Capacity
100 watt peak
Water Capacity
1 litre



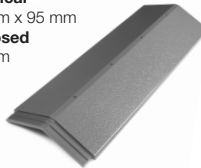
Eclipse Thermo Roof Tile

Dimensions Physical
1100 mm x 690 mm x 71 mm
Dimensions Exposed
1050 mm x 565 mm
Coverage
1 tile = 0.593 sqm 1.6 tiles per sqm
Weight
19.56 kg
Photovoltaic Capacity
0 watt peak
Water Capacity
1 litre



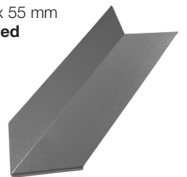
Eclipse Ridge Tile

Dimensions Physical
1100 mm x 395 mm x 95 mm
Dimensions Exposed
1050 mm x 395 mm
Coverage
1 tile = 0.415 sqm
Weight
3.87 kg



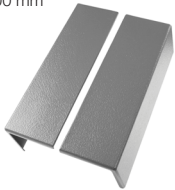
Eclipse Hip Tile

Dimensions Physical
820 mm x 390 mm x 55 mm
Dimensions Exposed
750 mm x 395 mm
Coverage
1 tile = 0.293 sqm
Weight
2.24 kg



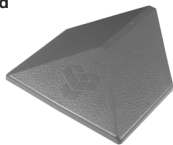
Eclipse Barge Tiles

Dimensions Physical
595 mm x 200 mm x 200 mm
Dimensions Exposed
570 mm x 200 mm
Coverage
1 tile = 0.114 sqm
Weight
3.00 kg



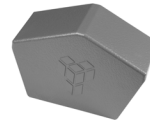
Eclipse Ridge End Cap

Dimensions Physical
467 mm x 410 mm x 100 mm
Dimensions Exposed
280 mm x 410 mm
Coverage
1 tile = 0.115 sqm
Weight
2.20 kg



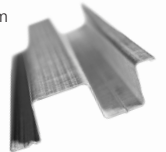
Eclipse Barge End Cap

Dimensions Physical
190 mm x 410 mm x 100 mm
Dimensions Exposed
280 mm x 395 mm
Coverage
1 tile = 0.111 sqm
Weight
2.20 kg



Eclipse Batten

Dimensions Physical
3000 mm x 75 mm x 20 mm
Material Thickness
0.75 mm
Truss Span
600 mm - 900 mm
Weight
0.8 kg per lineal metre



Tractile Eclipse Solar Features & Benefits

High Performance

- outperforms all other roofing products
- produces more electricity per square metre than traditional solar due to cooling the PV modules
- increased R-values

Seamless, Integrated Design

- integrates with Tractile Eclipse Roof tiles
- 4 in 1 combination of roof + insulation + electricity + hot water
- no projections above the roof plane
- hidden fixing system
- works with all typical roof structures and designs
- all accompanying electrical and plumbing services incorporated within the tile build up height

Integrated Hot Water

- water cools the PV modules increasing performance up to 12% over stand alone solar
- water channels remove heat from roof to be used as required for domestic hot water, pool heating and hydronic floor heating etc
- hot water and pool heating are traditionally the largest consumers of energy

Sustainable

- low embodied energy
- 8 x more sustainable than concrete and steel roofing products in terms of energy required to manufacture (MJ)
- lower carbon footprint
- 4.5 x more sustainable than concrete and steel roofing products in terms of carbon emissions (Kg of CO2)
- designed considering a complete cradle to cradle lifecycle analysis

Off-grid Living

- reduce or eliminate your electricity bills
- Tractile will save you money
- energy independence
- battery storage options
- electric vehicle compatible
- return on investment

Complete Roof Solution

- Eclipse Solar Thermal Tiles
- Eclipse Tiles
- ridge, hip and barge products to compliment Eclipse Roof
- integrated electricity and hot water generation
- patented Tractile batten fixing system
- naturally insulating materials

Multi Award-Winning Product

- designed and developed in Australia
- winner of numerous design awards including Best Design, Sustainability and Product Category
- patented hook fixing batten system
- large format design
- double height
- exceptional strength
- 130mm tile overlap as standard
- 55mm side lock

5-90° Pitch

- optimum range of 10° to 90°
- 5° to 10° possible using silicone in channels
- less than 5° with secondary roof system
- can be used as wall cladding
- most versatile product on the market

Street Appeal

- suits a wide range of Architectural styles, both modern and traditional
- can be installed "in line", half lap, quarter lap, 1/3rd lap, or as required
- adds value to the property
- no unsightly "bolt on" solar panels
- limitless colour options
- sleek 18mm tile edge profile
- new builds and replacement roofs

Visit Tractile.com.au or call our solar roofing experts to enquire about your project today