

**1.0 Structural Support:**

- The Collector weight is no more than 22kg/m<sup>2</sup>

	Weight with water	Collector Area	Gross Area	Weight per m <sup>2</sup>
<b>12 tube</b>	44 kg	0.98 m <sup>2</sup>	2.00 m <sup>2</sup>	22.00 kg/m <sup>2</sup>
<b>24 tube</b>	75 kg	1.96 m <sup>2</sup>	3.96 m <sup>2</sup>	18.94 kg/m <sup>2</sup>
<b>36 tube</b>	120 kg	2.94 m <sup>2</sup>	5.94 m <sup>2</sup>	20.20 kg/m <sup>2</sup>
<b>48 tube</b>	155 kg	3.92 m <sup>2</sup>	7.92 m <sup>2</sup>	19.57 kg/m <sup>2</sup>

- There is no hot water tank on the roof
- The storage cylinder is not greater than 450L
- The roof pitch is not greater than 45°
- The building is out of the wind zone where wind exceeds 50m/s as defined in NZS3604
- The solar collector has an area no greater than 4m<sup>2</sup>
- This area is out of the NZS3604 snow loading zone
- The solar collectors are installed parallel to the roof cladding unless otherwise specified in the consent  
OR where the solar collectors are installed to a different pitch to the roof the solar collector is:
  - not greater than 45°
  - is in a wind zone where the wind does not exceed 44m/NZS3604
  - the solar collector faces the same compass direction as the roof

**2.0 Materials:**

- Product**  
Sunriver products use an Powder coated ElectroGalv mild steel or Stainless steel frame, borosilicate glass, copper pipe, and EDPM and Butyl flashings - all with a 50yr durability under NZS3604.
- Compatibility**  
Between the roof and the Sunriver collector, there is always either an EDPM boot (dektite type) or Butyl rubber under the feet. – both these products are compatible with any roof type according to G12/AS2 table
- Compatibility subject to run off**  
As per compatibility table both the flashings (EDPM boots) and the Butyl rubber spacings under the feet are compatible with all roof types as listed in Table 3 of G12/AS2

**3.0 Solar Water Heater Requirements:**

- The product has been certified to AS/NZS2712:2007
- Controller certified to AS/NZS2712:2007 as part of whole system and minimizes the use of auxiliary heating by it design (data available on request re AS/NZS4234/2008 certification measuring system performance)
- Solar Water Heaters must have a minimum of 50L per m<sup>2</sup> of collector area

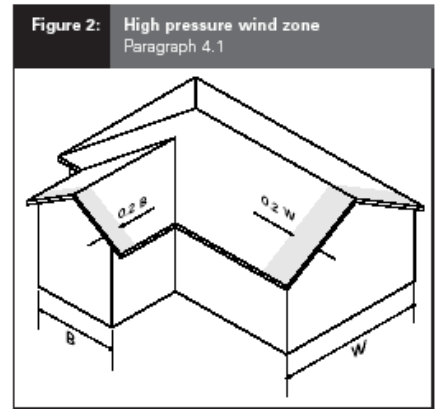
System Size	SR12	SR24	SR36	SR48
Collector Area (m <sup>2</sup> )	0.98	1.96	2.94	3.92
Minimum Cylinder size (L)	50	100	150	200
Actual cylinder size (L)	.....	.....	.....	.....

- Storage Tanks are covered under the AS/NZS4692.

- To prevent the growth from Legionella bacteria the following controls are in place. Choose one of the following:
  - continuously energized element 55% off the bottom of the water tank and a thermostat set to 60°C or higher
  - be controlled so that the water above the element is heated to 60°C once per day and the element is 150mm from the bottom of the tank
  - be controlled so that the water above the element is heated to 60°C once per week including the water in the collector
- For Instantaneous or pre-heater systems only the storage water passes through a cylinder as per 3.5.1, OR the instantaneous heater passes the water through not less than 70°C
- Protection from Frosts  
Sunriver collectors have passed AS/NZS2712:2007 level 2 (severe frost conditions) tests therefore are applicable anywhere in New Zealand

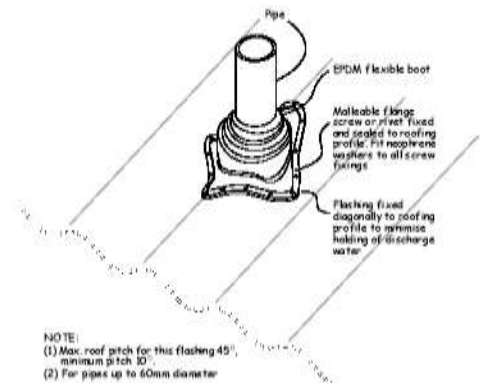
**4.0 Location of Solar Water Heaters:**

- The solar water collector is located outside the high pressure wind zone as shown in Figure 2. This is shown in attached roof map
- Solar Collectors are facing within 90° of geographic north as also shown in attached roof map
- Solar collectors must be inclined at an angle within 20° of latitude. In New Zealand that is Kaitia is at 35° (15° – 55°) and Invercargill is at 46° (ie 26° -66°), Christchurch is 43° (23° -63°)
- The solar pitch is 10° in this installation



**5.0 Installation of Solar Water Heaters:**

- Weather Tightness  
Penetrations are all less than 60mm (pipe sizes are 13 - 20mm), they will be flashed using EDPM boots as shown. Sealants used are in conjunction with mechanical fasteners.
- Pipe Insulation  
All pipes are insulated at all times

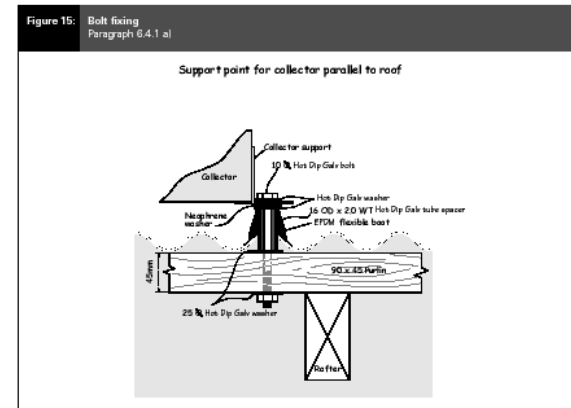
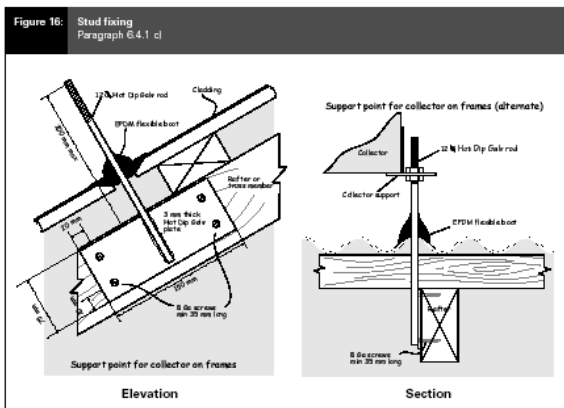
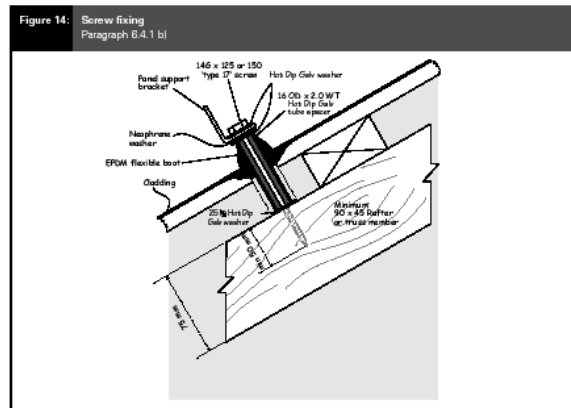
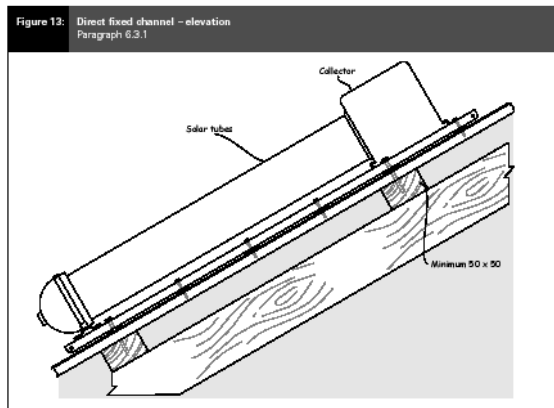
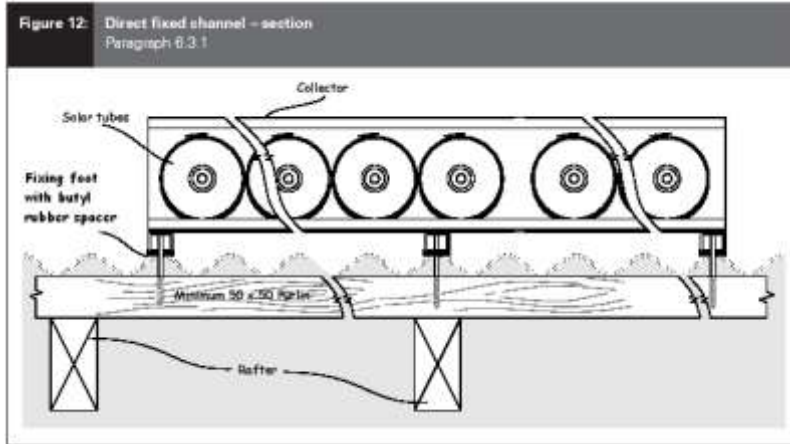


**6.0 Maintenance and Durability:**

- Sunriver Collectors are marked “Steelfort (manufacturer), Model, Manufactured date, “Tested to Level 1 Stagnation condition (Not suitable for installation in Australia)”, Passed test to frost level 2 AS/NZS 2712:2007

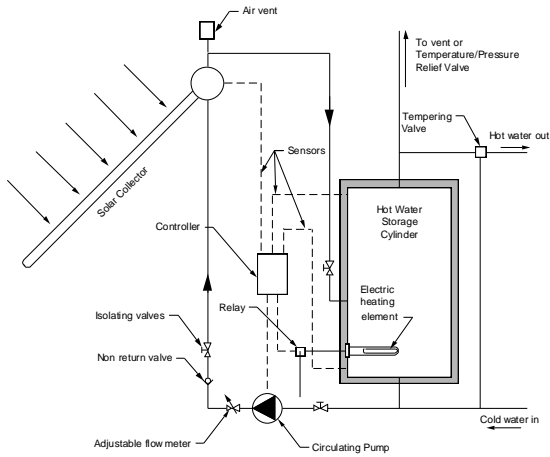
### 7.0 Structural Support for Solar Water Heaters:

- Collectors may be fixed as per figure 12 and figure 13 for direct fixing parallel to the roof cladding
- Solar Collectors may be installed elevated up to 50 mm above the roof cladding using details from figures 14, 15 or 16

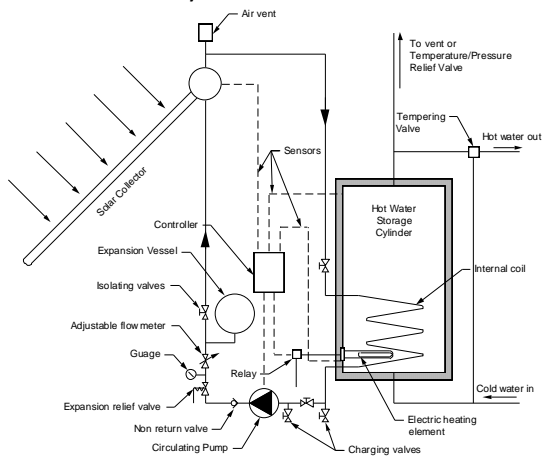


### 8.0 Arrangement of Components:

- Open Circuit System



- Closed Circuit System



- Dual Element tanks

