

# Solar Hot Water Heaters

## AS/NZS 2712



In order to encourage the use of alternative energy sources, the Australian Federal Government provides Renewable Energy Certificates (RECs) for installing solar hot water heaters. The Office of the Renewable Energy Regulator (ORER) manages this program. RECs are allocated based on the efficiency of the solar water heaters compared to traditional heating systems. A solar water heater is typically eligible for 10 to 64 RECs.

In order to apply for RECs, the solar water heater must be independently certified to AS/NZS 2712 – Solar and heat pump water heaters – Design and construction. SAI Global is an approved certifier for solar water heaters and our StandardsMark certification will meet the ORER regulatory requirements for RECs.

### Initial Review

Manufacturers/importers need to review the scope of AS/NZS 2712 to establish if the product designs are covered by the scope, such as:

- Systems up to 700L capacity
- Systems with solar collectors of close coupled and remote tank with collector system(s)
- Flat plate and evacuated tube collectors using primarily metallic absorber plates
- Heat pump systems – air and solar sourced

### Regulatory Requirements

#### Electrically Boosted Water Heaters

If the water heater is electrically boosted and the storage tank is un-vented, it is a “declared article” and must be independently certified to AS/NZS 60335.1 and AS/NZS 60335.2.21. SAI Global is an approved certifier for electrical products and our Electrical Safety Type Examination will meet the electrical regulatory requirements.

#### Gas Boosted Water Heaters

If the water heater is gas boosted it must be independently certified to AS 4552. SAI Global is an approved certifier for gas appliances and our Gas



Safety Certification will meet the gas regulatory requirements.



#### Plumbing Safety

If the solar water heater is connected to the water supply, then plumbing regulatory (AS 5200.000) requirements apply for installation purposes. Solar hot water heaters must have independent WaterMark Level 1 certification to AS 3498 - Authorisation requirements for plumbing products – Water heaters and hot-water storage tanks. SAI Global is an approved certifier for plumbing products and our WaterMark certification will meet the plumbing regulatory requirements.

If electrical or gas certification requirements apply, these must be met prior to proceeding with the WaterMark certification.

***SAI Global is the only organisation able to provide StandardsMark, WaterMark, Gas Safety and Electrical approval for your solar hot water heaters.***

### System Performance

#### Thermal Performance

A number of standards are referenced for the solar hot water system evaluation in terms of performance against contemporary systems as outlined in the Renewable Energy Certificate Calculation Methodology. The eligibility for RECs is based on performance evaluated against AS/NZS 4234 – Solar water heaters – Domestic and heat pump – Calculation of energy consumption. Further information is available on the Office of the Renewable Energy Regulator (ORER) website: [www.orer.gov.au](http://www.orer.gov.au)

#### No Load System

Solar water heater systems are required to demonstrate stability and the potential for ‘water dumping’ during extended periods of no water draw off. A test method has been established for both vented and un-vented systems.



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### Additional Requirements

In addition to the regulatory requirements, AS/NZS 2712 has specific materials and performance requirements.

#### Collector

A number of requirements are called up that deal with the design, materials of construction and performance of the collector. Performance tests evaluate the structural soundness of the collector under normal and abnormal conditions (stagnation). The thermal efficiency of the collector is evaluated (AS 2535.1) and the loss of this efficiency after stagnation.

#### Container

The container, where applicable, is generally required to satisfy AS/NZS 4692.1 for the design, materials of construction and performance. This includes a pulsation test to evaluate the ability of the storage container to withstand pressure cycling (250,000 cycles).

#### Heat Pump Modules

The heat pump module must demonstrate electrical safety compliance with AS/NZS 3350.2.40. The component design must meet AS 1677 requirements.

### Application Process

**Step 1:** Companies applying for certification are invited to complete the StandardsMark Application Form and submit it with the application fee to SAI Global.

The StandardsMark application form is available via <http://www.saiglobal.com/Assurance/ProductCertification/DownloadingDocuments/default.htm>

The application fee is dependent on the manufacturing location, as it includes the initial audit and costs associated with travel, accommodation, audit time and expenses. We will allocate a Client Manager to take you through the certification process.

**Step 2:** SAI Global provides a client confidential online access via

<http://standardsmark.saiglobal.com/certifiedproducts/> for the submission of the supporting documentation to the application, such as:

- A complete listing of solar water heater systems within this application (a template is available online for this information).
- A sample bill of materials, assembly drawings of each different solar water heater type and the completion of the data input sheet for each model for system evaluation to AS 4234.
- A Quality Plan Summary of the manufacturing process and indication of audit readiness of the manufacturing site.
- Any previous reports of testing conducted of the solar water heater systems or components.
- Information on any current regulatory approvals i.e. Certificates of Approval or Suitability.

**Step 3:** The Client Manager will review the submitted documentation and provide feedback on the documentation, the proposed audit dates, testing plan including sample selection, recognised laboratories and the next steps in certification process.

Client will submit a product marking proposal that incorporates the requirements of AS/NZS 2712, the licence number and the StandardsMark logo. The StandardsMark logo and rules on how to display the Mark are available via <http://www.saiglobal.com/Assurance/quicklinks/downloadlogos/>

**Finalisation:** Upon successful completion of the type testing and the factory assessment, a licence is granted to affix the StandardsMark on listed certified compliant products. The certification details will become available on the SAI Global Certified Products Database. The StandardsMark program requires ongoing audits.

**Submission to ORER:** On completion of successful certification, the client submits a RECs application.

For more information, please contact SAI at [product@saiglobal.com](mailto:product@saiglobal.com)

