

# APRICUS NZ ECO ENERGY HOT WATER SYSTEMS

## 1

### GENERAL

This section relates to the supply and installation of **Apricus NZ Eco Energy (trade name for Finite Planet Ltd)** hot water systems.

It includes:

- Reclaim Energy CO2 hot water heat pumps
- Apricus evacuated tube solar hot water systems

#### 1.1

##### RELATED WORK

Refer to the hot and cold water system section for pipe systems

##### Documents

#### 1.2

##### DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

[NZBC](#) Water supplies

[G12/AS1](#)

[AS/NZS](#) Performance of electrical appliances - Air conditioners and heat pumps - Part 1.1:

[3823.1.1](#) Non-ducted air conditioners and heat pumps - Testing and rating for performance

[AS/NZS](#) Performance of electrical appliances - Air conditioners and heat pumps - Part 1.2:

[3823.1.2](#) Ducted air conditioners and air-to-air heat pumps - Testing and rating for performance

[AS/NZS](#) Performance of electrical appliances - Air conditioners and heat pumps - Energy

[3823.2](#) labelling and minimum energy performance standard (MEPS) requirements

[NZS 4603](#) Energy efficiency - Domestic type hot water systems

[NZS 4607](#) Installation of thermal storage electric water heaters: valve vented systems

[Electricity \(Safety\) Regulations 2010](#) (Reprint as at 4 April 2016)

[Plumbers, Gasfitters and Drainlayers Act 2006](#)

#### 1.3

##### MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are (relevant to product):

- Reclaim Energy Operation and Installation Guides
- Apricus Solar Operation and Installation Guides

Manufacturer/supplier contact details

Company: **Finite Planet Ltd t/a Apricus NZ Eco Energy**

Web: [www.ecohotwater.co.nz](http://www.ecohotwater.co.nz)

Email: [info@ecohotwater.co.nz](mailto:info@ecohotwater.co.nz)

Telephone: 07 312 3382

##### Warranties

#### 1.4

##### WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

~ years: For ~

The manufacturer/supplier warranty period will depend on the type, model, parts, labour and application of the selected product. Refer to Apricus NZ Eco Energy (Finite Planet Ltd) for confirmation of appropriate warranty details.

- Provide this warranty on the Apricus NZ Eco Energy standard form.
- Commence the warranty from the date of installation.

Refer to the general section 1237 WARRANTIES for additional requirements.

1.5

#### WARRANTY - INSTALLER/APPLICATOR

Provide an installer warranty:

~ years:                              For ~

The installer warranty period will depend on the type, model, parts, labour and application of the selected product. Refer to Apricus NZ Eco Energy (Finite Planet Ltd) for confirmation of appropriate warranty details.

- Provide this warranty on the installer standard form.
- Commence the warranty from the date of installation.

Refer to the general section 1237 WARRANTIES for additional requirements.

#### Requirements

1.6

#### NO SUBSTITUTIONS

Substitutions are not permitted to any specified Apricus NZ Eco Energy products, or associated products, components or accessories.

1.7

#### COMPLY

Comply with the Electricity (Safety) Regulations 2010 and the network utility operator's requirements. Give notices for inspections and carry out tests as required.

1.8

#### QUALIFICATIONS

Carry out all work under the direct supervision of a Certifying Plumber under the [Plumbers, Gasfitters and Drainlayers Act 2006](#).

1.9

#### INFORMATION FOR OPERATION AND MAINTENANCE

Supply maintenance information to requirements set out in the 1239 OPERATION & MAINTENANCE section.

1.10

#### HOT WATER TEMPERATURES

To [NZBC G12/AS1,6.14](#)

Storage water heaters to store water at not less than 60°C or to ensure entire cylinder is heated to 60°C for one hour at least once every seven days, as per NZBC G12

Hot water piping system, with temperature controls where necessary (tempering valve etc), to provide water at the outlet at the following temperatures:

For personal hygiene fixtures (showers, baths, wash hand basins etc.) temperatures to be close to but not to exceed:

- 45°C - for early child hood centres, schools, elderly facilities, hospitals, psychiatric or disabled institutions.
- 55°C - for personal hygiene fixtures in all other buildings.

For non-personal hygiene fixtures (kitchen sinks and equipment, laundry tubs, cleaners' sinks, industrial fixtures etc) temperatures are:

- Unrestricted - direct from water heater, approx. 60°C, must be less than 65°C (for kitchen sinks and equipment, laundry tubs, cleaners sinks etc.) - in all buildings.
- Unrestricted - direct from water heater not tempered (for industrial fixtures and specific items etc.) - in all buildings.

## **Performance**

### 1.11

#### **FINAL INSPECTION AND TEST**

Submit the work for inspection and test and prove to the satisfaction of the network utility operator that the installation complies with all Acts and Regulations and has been tested for leakage and proved to be sound.

Testing should be at the time of completion. Confirm this timing before carrying out any tests. Test and demonstrate the system according to manufacturer's specification.

## **2**

### **PRODUCTS**

#### 2.1

##### **RECLAIM ENERGY CO2 HOT WATER HEAT PUMP**

**Reclaim Energy CO2 hot water heat pump** water heater Model REHP-CO2 including pipework, refrigerant, cabinet, drain point, filters, coils, controls, and associated water storage cylinder to Apricus NZ Eco Energy requirements, AS/NZS 3832.1.1 and AS/NZS 3832.1.2, with minimum energy performance standards (MEPS) in accordance with AS/NZS 3832.3.

Hot water storage cylinder to be have specification as per manufacturer.

#### 2.2

##### **APRICUS SOLAR EVACUATED TUBE SYSTEMS**

**Apricus solar hot water system** Models ETC20, ETC30 & ETC40 including solar collector, roof mounting frame, pump, controller, and associated water storage cylinder to Apricus NZ Eco Energy requirements, AS/NZS 3832.1.1 and AS/NZS 3832.1.2, with minimum energy performance standards (MEPS) in accordance with AS/NZS 3832.3.

Hot water storage cylinder to be have specification as per manufacturer.

## **3**

### **EXECUTION**

#### **Installation - general**

##### 3.1

##### **HANDLE AND STORE**

Handle and store units, cylinders, pipes, fittings and accessories to avoid damage. Store on site, under cover on a clean level area, stacked to eliminate movement and away from work in progress. Store according to manufacturer's instructions.

##### 3.2

##### **CONCEAL**

Conceal pipework within the fabric of the building unless detailed otherwise. Satin finish chrome plate exposed work, complete with matching ferrule at the surface penetration.

##### 3.3

##### **CORROSION**

Separate all metals subject to electrolytic action from each other and from treated timber, concrete and other lime substances by space, painting of surfaces, taping, or separator strips.

##### 3.4

##### **THERMAL MOVEMENT**

Accommodate movement in pipes resulting from temperature change by the layout of the pipe runs, by expansion joints and by sleeving through penetrations.

##### 3.5

##### **PIPE SIZE**

Plumber to check and confirm adequate pipe size, incoming mains and meter on site as a part of the installation. Pipe sizing calculation to [NZBC G12/AS1](#), table 4.

#### **Installation - general, hot water cylinders**

##### 3.6

##### **HOT WATER CYLINDER INSTALLATION - GENERALLY**

Install hot water cylinders complete to the manufacturer's requirements and to [NZBC G12/AS1](#), 6.11, Water heater installation. Valve-vented systems to [NZS 4607](#).

3.8

#### SEISMIC RESTRAINTS - WATER HEATING APPLIANCES

Water heating appliances to be restrained to manufacturer's requirements and [NZBC G12/AS1](#), 6.11, Water Heater Installation.

3.9

#### INSTALL STORAGE HOT WATER CYLINDER OVERFLOW TRAY

Install drained overflow tray to storage hot water cylinder to [NZBC G12/AS1](#).

3.10

#### INSTALL TEMPERING VALVE

Install one metre minimum from outlet of hot water cylinder and to manufacturer's instructions.

3.11

#### INSTALL RECLAIM HOT WATER HEAT PUMP

Install Reclaim Energy CO2 hot water heat pump Model REHP-CO2 including pipework, compressor, condensate drain, controls, and associated water storage cylinder to requirements of Apricus NZ Eco Energy and manufacturer of associated hot water cylinder and to AS/NZS 3832.1.1, AS/NZS 3832.1.2, and AS/NZS 3832.2.

3.12

#### INSTALL APRICUS SOLAR HOT WATER SYSTEM

Install Apricus solar hot water system Models ETC20, ETC30 or ETC40 including collector, roof mounting frame, pipework, valves, controls, and associated water storage cylinder to requirements of Apricus NZ Eco Energy and manufacturer of associated hot water cylinder and to NZGBC G12/AS1 and AS2, AS/NZS 3832.1.1, AS/NZS 3832.1.2, and AS/NZS 3832.2.

### Completion

3.13

#### REPLACE

Replace damaged or marked elements.

3.14

#### LEAVE

Leave work to the standard required by following procedures.

3.15

#### REMOVE

Remove debris, unused materials and elements from the site.

## 4

### SELECTIONS

For further details on selections go to [www.ecohotwater.co.nz](http://www.ecohotwater.co.nz)

Substitutions are not permitted to the following, unless stated otherwise.

#### CO2 hot water heat pump

4.1

##### RECLAIM ENERGY CO2 HOT WATER HEAT PUMP

Location:	Outdoors
Brand:	Reclaim Energy CO2
Model:	Reclaim Energy CO2 – REHP-CO2

#### Evacuated tube solar hot water system

4.2

##### APRICUS SOLAR EVACUATED TUBE HOT WATER SYSTEM

Location:	Outdoors
Brand:	Apricus
Model:	ETC20, ETC30 or ETC40