

L2AA

BUILDING CONSENT

114080A

PROPERTY ID

098607



Code Compliance Certificate
Form 7, Section 95, Building Act 2004

The Building

Street Address of building: 16 Beach Road URENUI 4655
Legal Description of land where building is located: LOT 1 DP 324159
Current, lawfully established use: Dwelling
Year first constructed: Unknown

The Owner

Name of owner:	Deborah Joy Mooney	Phone number: (Bus.)	06 755 1691
	Kenneth Ronald Martin	(Pvt.)	027 452 9710
Contact Person:	Nova Energy Solar Ltd	Facsimile number:	-
Mailing Address:	16 Beach Road, RD 44 URENUI		

Building Work

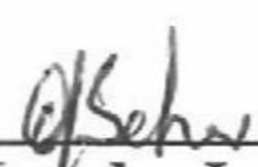
Building Consent number:	BC12/114080
Description of work:	2 x solar panels retrofitted to 300 L mains pressure hot water cylinder
Issued by:	New Plymouth District Council

Code Compliance

The building consent authority named below is satisfied, on reasonable grounds, that –
(a) the building work complies with the building consent.

This is a final code compliance certificate issued in respect of all of the building work under the above building consent.

CODE COMPLIANCE CERTIFICATE



Team Leader Inspectorate

Date Issued: 18 December 2012



YOUR INSPECTIONS FOR THIS BUILDING PROJECT (BC No.: BC12/114080)

When replying please quote: DM1364398 - BC12/114080
Property ID: 98607

29 October 2012

Owner/Applicant: D J Mooney & K R Martin

Property Address: 16 Beach Road URENUI 4655

Project Description: Residential/Farm - 2 x solar panels retrofitted to 300 L mains pressure hot water cylinder

This schedule indicates the types of inspections that your building work must comply with before a code compliance certificate (CCC) can be issued. Otherwise, a notice to fix may be issued. The number of inspections that your project needs can depend on how you intend to carry out the building work.

The inspections required for your building project are:

- Final inspection.

Note: Further inspections may be required by the inspector.

Reminder

- **Requesting an inspection.** Bookings may fill up two or more days in advance. Requests for inspection must be booked as soon as you know that you will be ready. Having your representative and consent plans and documentation on-site during the inspection will enable the inspector to discuss the issues directly, thus avoiding delays.
- **Inspection fees.** Additional costs incurred due to extra inspections, late cancellations or other related services must be paid before the issue of a CCC.
- **Issue of CCC.** When you have completed your building work, you must submit your application for a CCC. A copy of the form is included in this package.

Signed for and on behalf of New Plymouth District Council

Tracey Shaw
Building Consents Officer

PRODUCER STATEMENT

I	<i>HEATING SYSTEMS 2010 Ltd</i> <i>at 27B Birch Ave, Tauranga. Ph 07 579 5262</i> <i>being an approved installer / applicator of a Nova Energy solar system</i>		
at	<i>16 Beach Road, RD 44,</i> <i>URENUI 4377</i>		
for	<i>Kenneth MARTIN</i> <i>& Deborah MOONEY</i>		
on	<i>15th November 2012</i>		
<i>Confirm the domestic hot water solar heating system has been installed</i> <i>in accordance with the manufacturer's installation/application</i> <i>requirements G12/AS2 NZS2712:2007</i>			
<i>SIGNED</i>	<i>Mark Hartstone – Plumbing reg no. 07006</i> 	<i>DATE</i>	<i>15/11/2012</i>



Electrical Certificate of Compliance

for a low voltage installation if prescribed electrical work has been done on any part of it and the prescribed electrical work involved placing, replacing, or repositioning conductors or fittings attached to conductors.

No. **3864245**

No. of attachments

To be completed whether or not an inspection is required.

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer **Kenneth Martin & Deborah Meoney** Phone: **06 752 3324**
 Address of installation **16 Beach Rd Urenui**
 Postal address of customer (if not as above)

DECLARATION OF CONFORMITY (Please tick (✓) appropriate boxes)

In accordance with Regulation 58 of the Electricity (Safety) Regulations 2010, the design of the installation or part of the installation to which this certificate applies

- (a) complies with either Part 2 of AS/NZS 3000:2007 ☒ or Part 1 of AS/NZS3000:2007 and Regulation 59 ☒ and
 (b) the supply system of the installation or part of the installation to which this certificate applies is
 230V/400 V MEN ☒ or attached other system ☒

WORK DETAILS

No. of lighting outlets	No. of ranges	Please tick (✓) as appropriate where work includes:	
No. of socket outlets	No. of water heaters	Mains	Main earthing system
Was any installation work carried out by the homeowner?	Yes No	MEN Switchboard closest to point of supply	Electric lines

Description of work carried out (If necessary attach any pages with work done)

Electrical work for solar install

CERTIFICATION OF WORK (Please tick (✓) appropriate boxes)

I certify that the completed installation or part of the installation to which this certificate applies

- ☒ has been installed in accordance with the design detailed in the Declaration of Conformity section above
☒ has had tests which are required by the Electricity (Safety) Regulations 2010 satisfactorily completed
☒ has an earthing system that is correctly rated
☒ contains fittings which are safe to connect to a power supply
☒ is safe to connect to a power supply

ELECTRICAL WORKER DETAILS

Name **Eric Marsh**
 Company **END Electrical**
 Signature **[Signature]**

Registration No. **I 256861**
 Contact Ph No. **0274410032**
 Date **16-11-12**

INSPECTION DETAILS

Electrical work requiring inspection by a registered electrical inspector

- ☐ Mains work (mains, MEN switchboards closest to the point of supply, or main earthing systems) ☐ Attached other ☐ Work carried out in accordance with Part 1 of AS/NZS 3000:2007

I certify that the items identified above are electrically safe and that the inspection has been carried out in accordance with the Electricity (Safety) Regulations 2010.

Name _____ Registration No. _____
 Signature _____ Date _____
 Contact Ph No. _____

CUSTOMER COPY – THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED

Date.....24/10/12.....

JOB #16567.....

Attention: Building Control Officer



Accredited SIA Solar Water Heating Installer

NOVA ENERGY SOLAR LTD

[a] PO Box 2310 | Tauranga 3140

[p] 07 578 5281 | [f] 07 571 2074

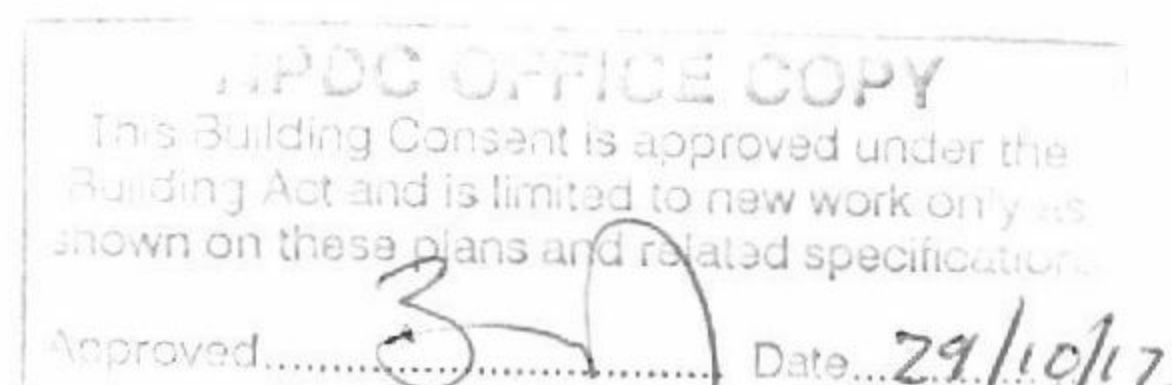
Freephone 0800 668 276

[e] solar@novaenergy.co.nz

Re: CONSENT APPLICATION FOR SOLAR WATER HEATING SYSTEM

Attachment References;

1. Agent application consent details.
2. Property rates demand
3. EECA check list solar hot water
4. Nova energy system specification
5. Nova energy system specification
6. Nova energy system testing certification
7. Solar controller specification
8. Solar controller schematic
9. Tempering valve specification
10. Day lighting requirements
11. Smoke detector location to bedrooms
12. Solar pipe work routing
13. Solar panel collector location indicated on house elevation
14. Solar panel collector location – actual photograph location



BC12/114080



Note:

Should you require information regarding this application, please contact;

Marlena Watts

E-mail

0800 668 276

mwatts@novaenergy.co.nz

Permit Administrator



Date 16-10-2012

Accredited SIA Solar Water Heating Installer

Attention:

NOVA ENERGY SOLAR

|a| PO Box 2310 | Tauranga 3140

15 B Amber Cres | Tauranga 3110

|p| 07 578 5281 |f| 07 571 2074

|e| solar@novaenergy.co.nz

To whom it may concern

re: COUNCIL CONSENT FOR SOLAR WATER HEATING SYSTEM FOR:

Mr Ken Martin

Address 16 Beach Road, Urenui

This letter serves to advise I, the above named, have appointed Nova Energy Solar Ltd to act on my behalf as an agent for the application of council consent and also to search for and copy any relevant information from my property file.

Yours faithfully

NPDC Approved
29 OCT 2012

X K Martin

Checklist for solar water heating installations

The following checklist is general in nature. It is designed to help you in your application for a building consent for the installation of a solar water heating system.

- ☒ The more boxes you can tick under 'general', the better equipped you will be to experience a quick, straightforward building consent for your solar water heating installation.

General

- ☒ One of the following products recognised by AS/NZS 2712:
- Refer: Complying product list on
http://www.solarindustries.org.nz/supplier_install.asp#product
- ☒ Legionella protected
(by a heating element and controller)
- ☒ Frost protected
- ☒ Weather tight
- ☒ Compatible materials used
- ☒ Collector mounted and supported correctly (directly on roof or on frame)
- ☒ Operating and safety devices must comply with AS/NZS 2712:2007
- ☒ Tempering valve

Minor plumbing works

- ☒ Weight on roof less than 20 kg/m²

Significant consideration

- ☐ Weight on roof greater than 20 kg/m² – subject to structural assessment
- ☐ Roof structure specifically designed to support tank
- ☐ Correct mounting of tank, collector or common frame (tank and collector)

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Please ensure you have supporting documentation for each of the items listed above and for more information about what this may entail visit the Department of Building and Housing website and access the draft 'Acceptable Solution' www.dbh.govt.nz/energy-Efficiency

<u>Nova Energy Solar</u> SolarElite Technical and General Information	
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180 Panel

- Gross absorber area 1.97 m²
- 1 x ➤ Weight 39.04 kg ✓
- Fluid Volume 1.32 liters
- Weight/m² 17.5 kg/ m²

250 Panel

- (4) ➤ Gross absorber area 2.53 m²
- Weight 47.41 kg ✓
- Fluid Volume 1.70 liters
- Weight/m² 16.8 kg/ m²

General Specifications

- Tested to and passed all AS/NZS2712:2007 tests for "Solar Water Heaters – Design and Construction." report number 30S-08-0002 TRP 412603.
- Tested to and passed all AS/NZS2535.1:2007 tests for "Thermal performance of glazed liquid heating solar collectors including pressure drop" report number 30S-08-0002 TRP 412572.
- Glazing – toughened low iron solar prismatic glass 3.2 mm – passed for Resistance to Hail according to AS/NZS2712:2007 at Vipac Engineers and Scientists – report number 30S-08-0002 TRP 412603.
- Full flat plate copper absorber ultrasonically welded to copper fluid channels – solar absorbance 95.3%, thermal emittance 4.7% as per ASTM E 891. Manufactured to DIN EN ISO 14001 and BS EN ISO 9001:2000 Cert.No. FM 81181.
- Performance
 - $\eta_0 = 0.7891$
 - $a_1 = 2.4895$
 - $a_2 = 0.0452$

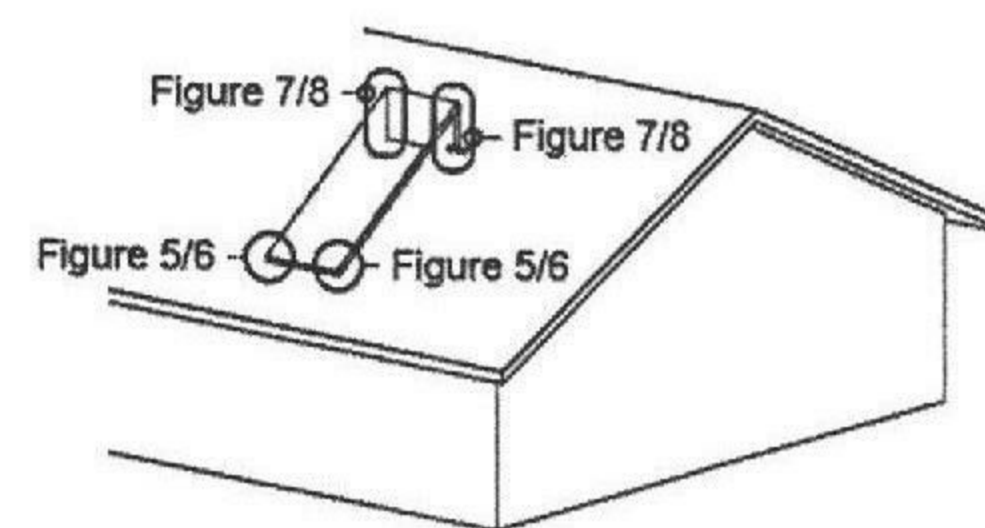
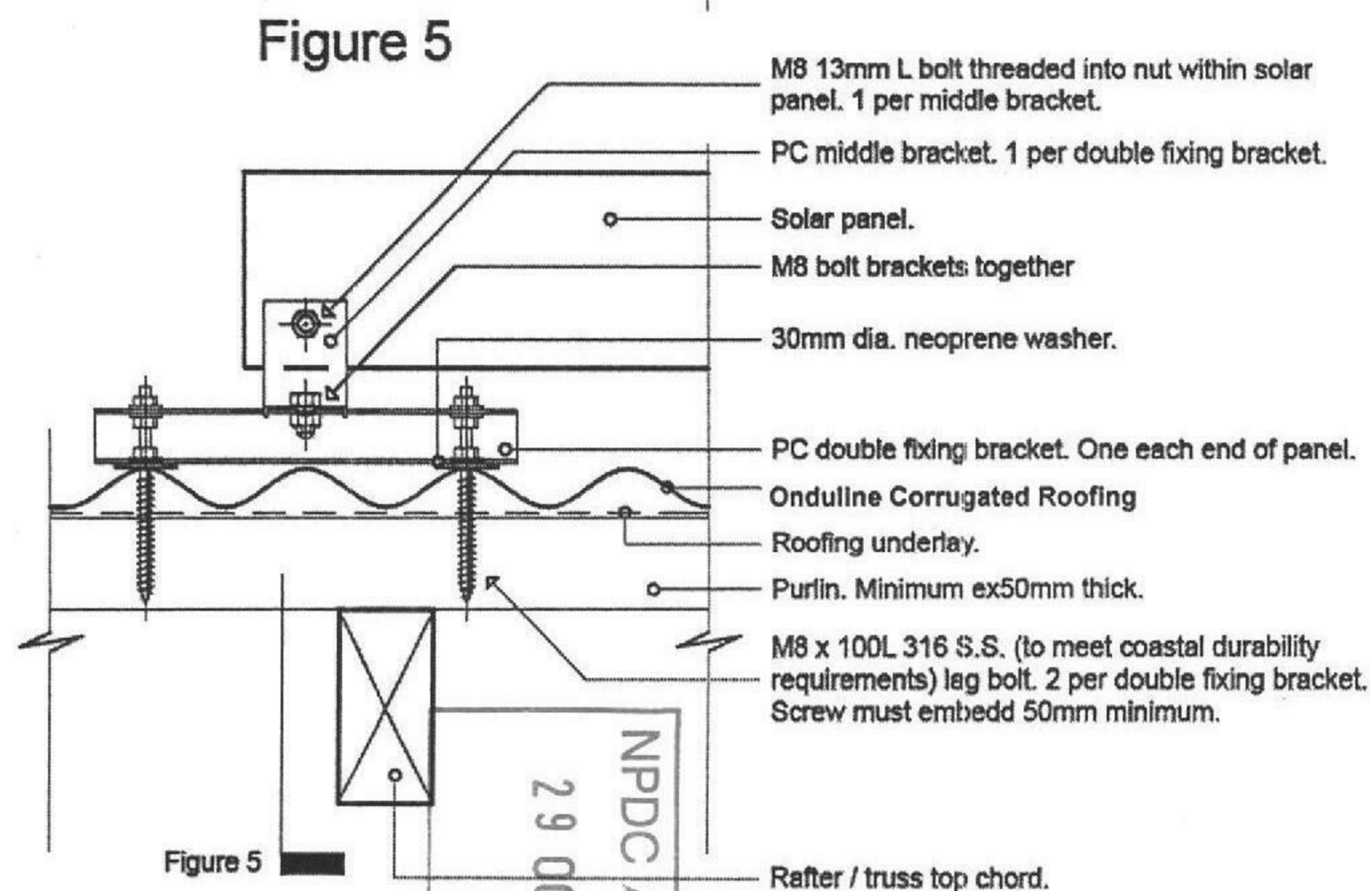
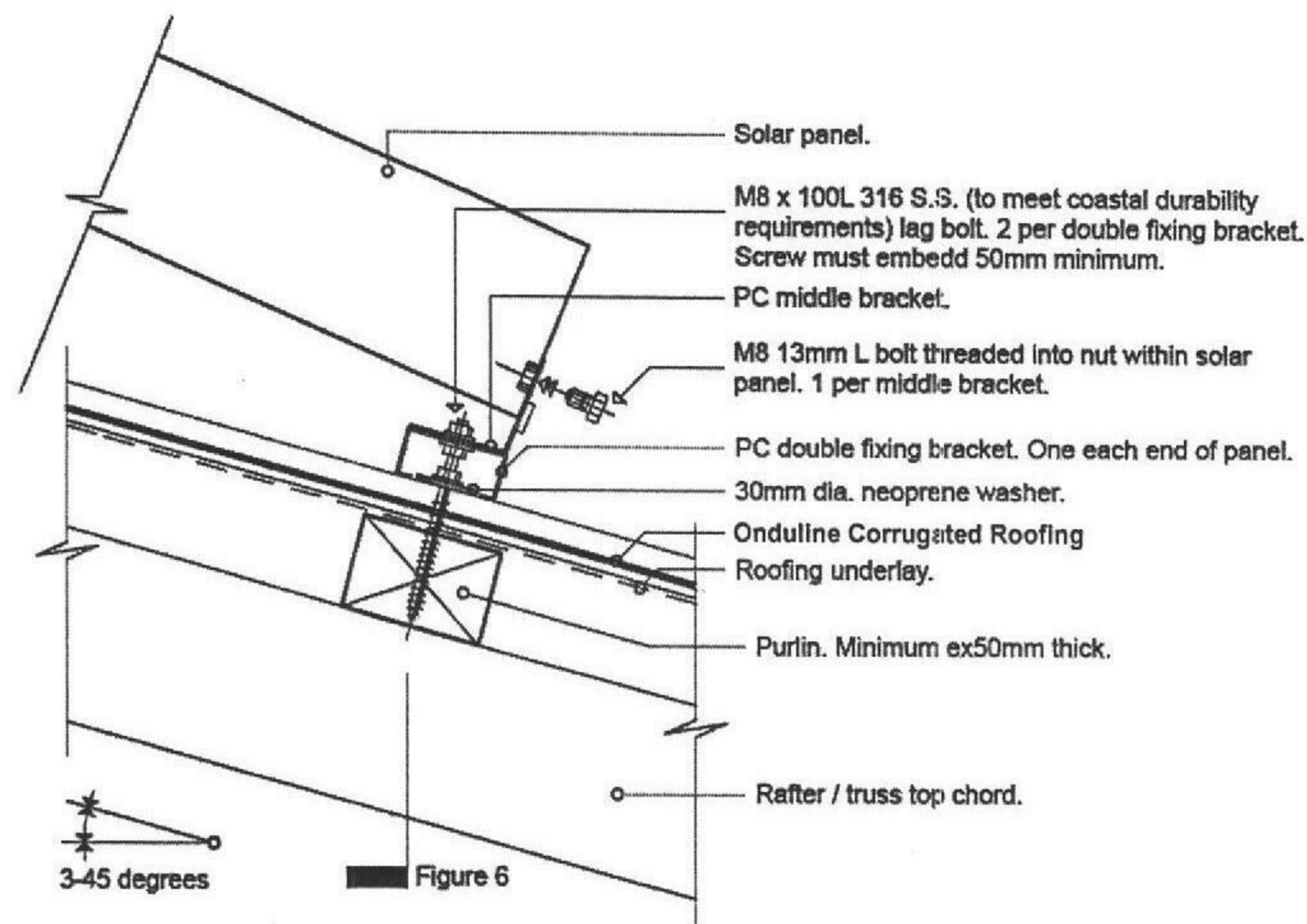


- Magnetron ceramic/metal selective absorbance coating.
- Absorber durability 25 years – tested and passed at Fraunhofer Institute for Solar Energy Systems Germany report A05/013. Moisture resistant.
- Fluid channels 99.9% copper – NZS3501 tested to 10 Mpa.
- Panel contents – absorber, high reflectance heat foil, 590 °C rated mineral insulation, glass and aluminum backing sheet and support channels.
- There are no flammable or noxious components.
- The panel has been tested to and passed level 2 (-15 °C) frost conditions according to AS/NZS2712:2007 at Vipac Engineers and Scientists – report number 30S-08-0002 TRP 412797. Suitable for all frost zones. Frost protection is through electronic activated circulation and in some instances a manual frost protection device.
- Panel support channels aluminum alloy 6060 and manufactured in accordance with ISO 9001:2002. Cert. No BVQI 129755.
- Bronze body circulation pumps.
- All electronic controls manufactured in New Zealand to ISO9001 and Ctick standards.
- All components are designed to meet or exceed the requirements under New Zealand Building Code Acceptable Solution G12/AS2.

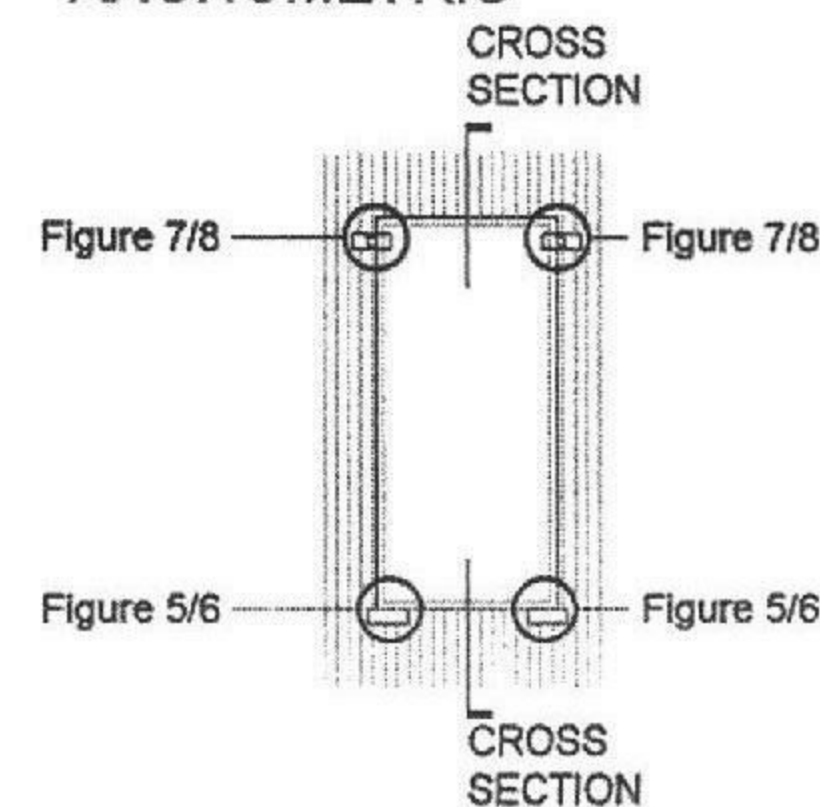
Issued without changes.

Date: 01 December 2008.

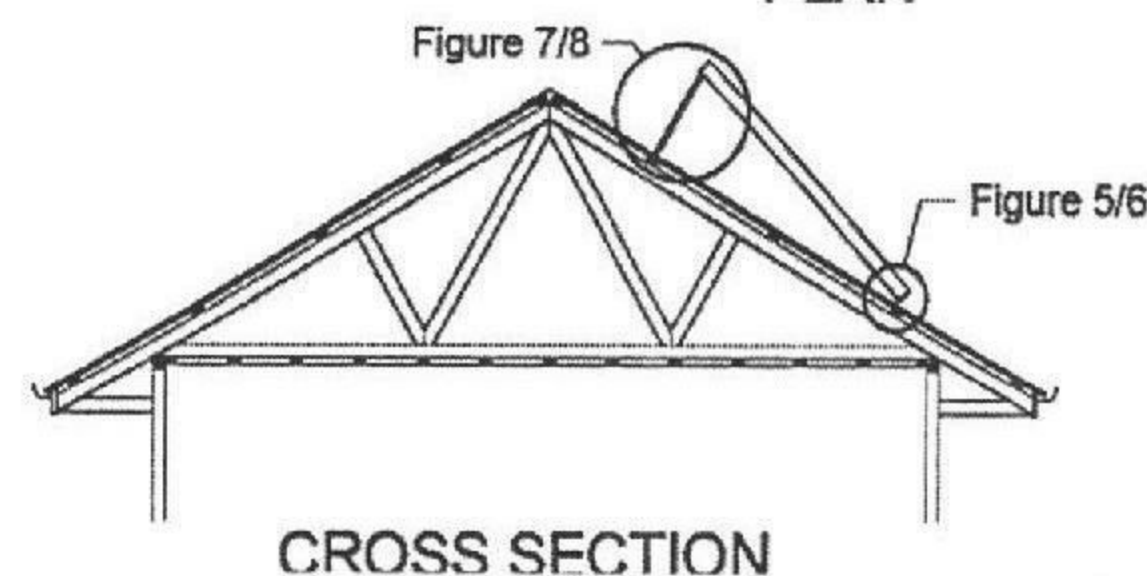
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29 OCT 2012



AXONOMETRIC



PLAN



This drawing remains property of Nova Energy Solar Limited.

NOTE: All details and specifications are indicative only and are subject to change without notice. All Nova Energy Solar system are to be installed by approved contractors only.

Systems designed within these documents are applicable up to and including Very High wind zones and up to and including 1KPa snow loading. For greater design loads consult Nova Energy Solar.

Drawing Package:

Panel Installations

Onduline Corrugated Roofing

Drawing Title:

Panel Lower Fixing Roof Connection - Panel At Different Pitch To Roof

Drawing Scale(s) @A4: 1:5, 1:100

Date: 21.04.09

Checked: MP

Revision: H - 03.08.10

Drawing Number:

B-03

Nova Energy Solar Limited
Solar Water Heating
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solar@novaenergy.co.nz

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energy

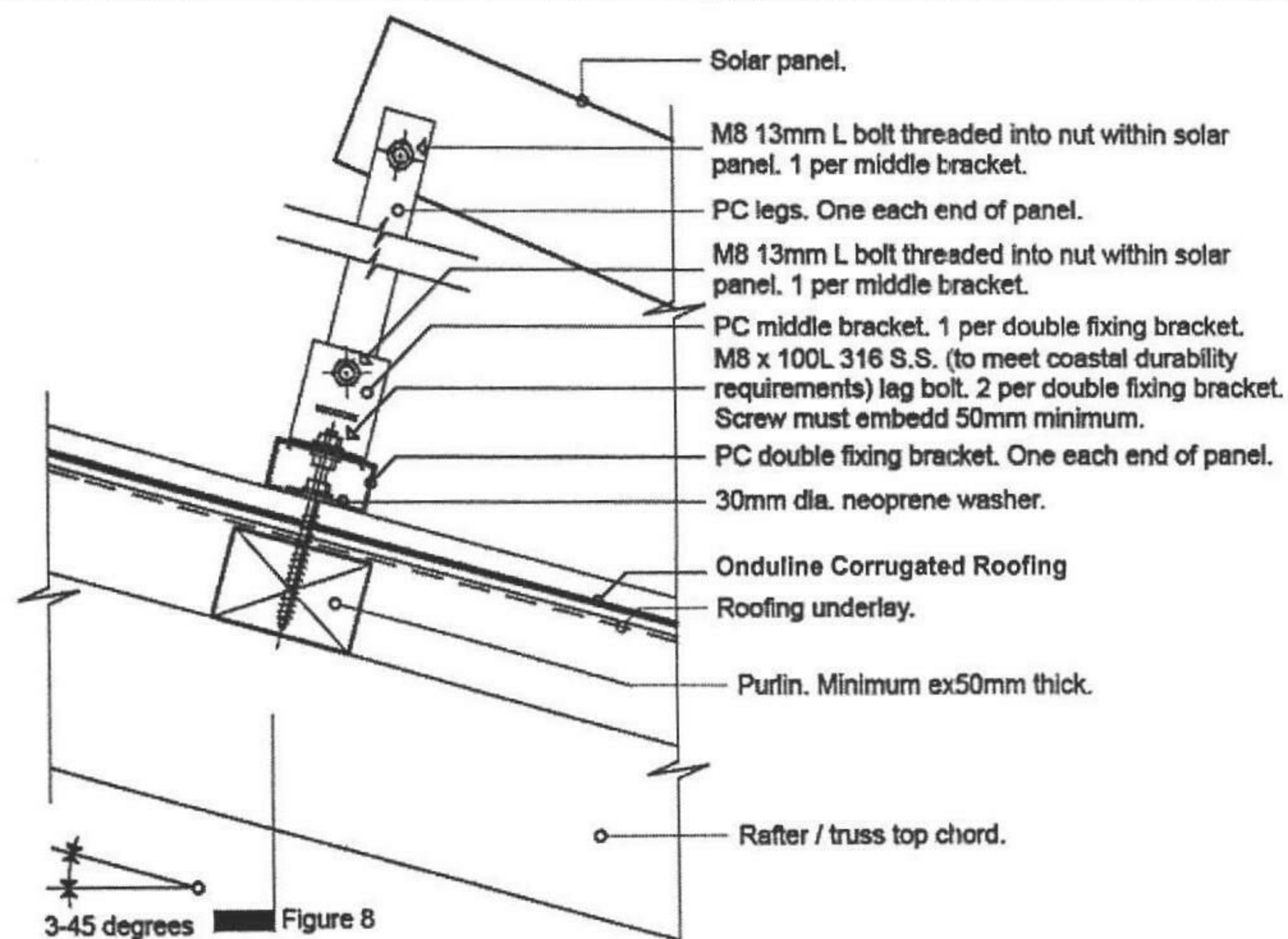


Figure 7

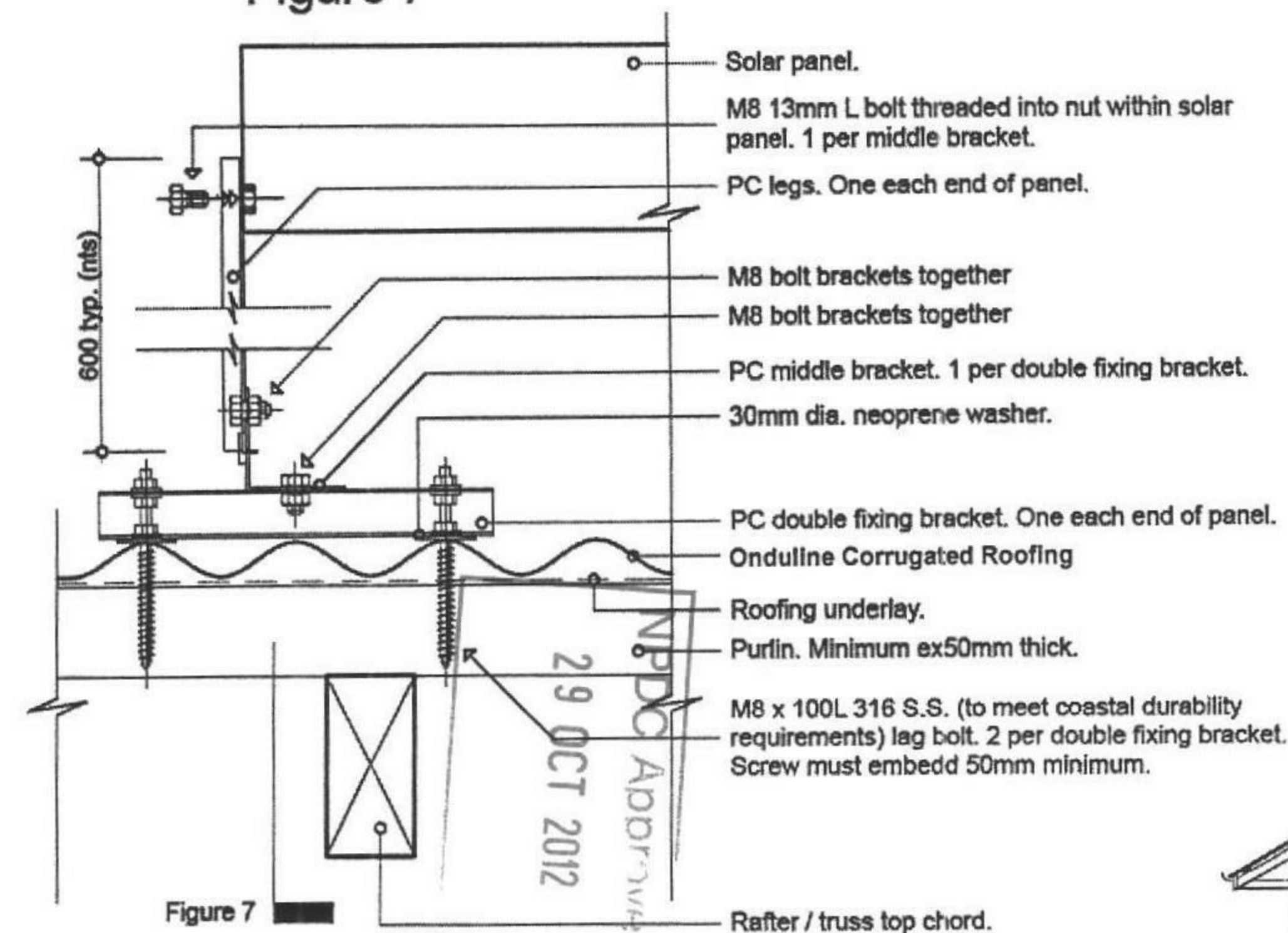
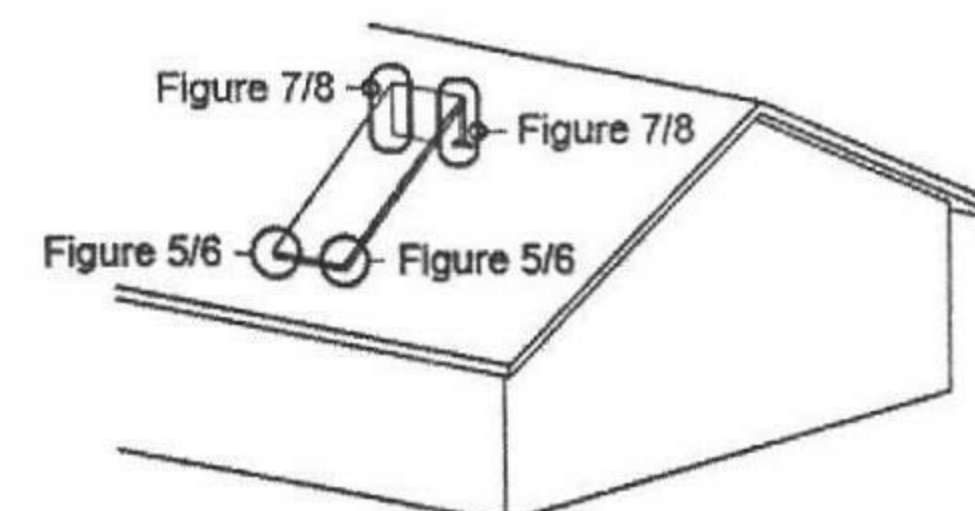
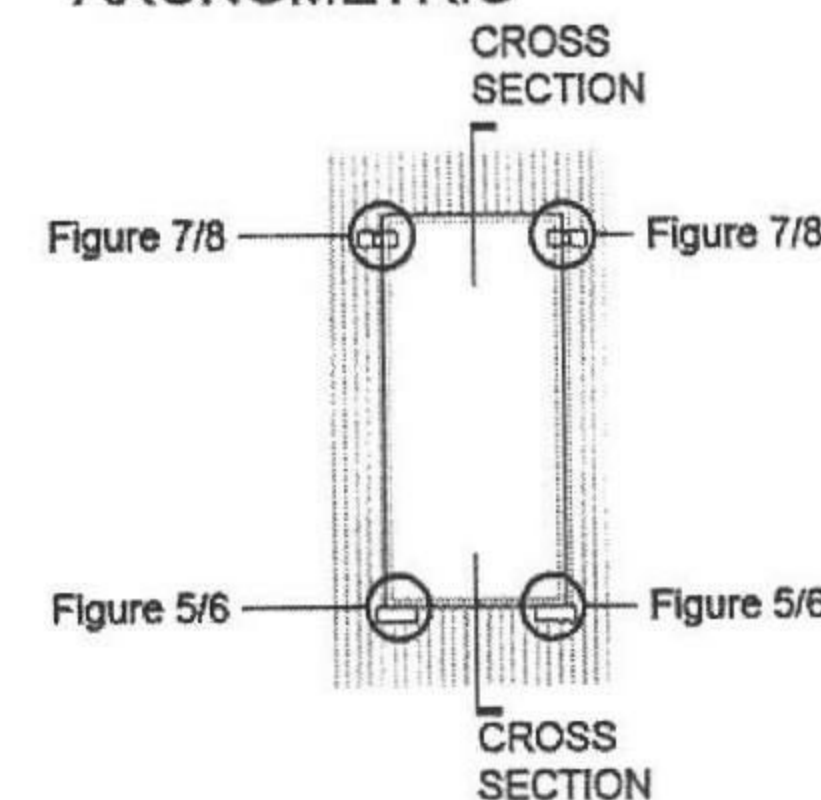


Figure 7

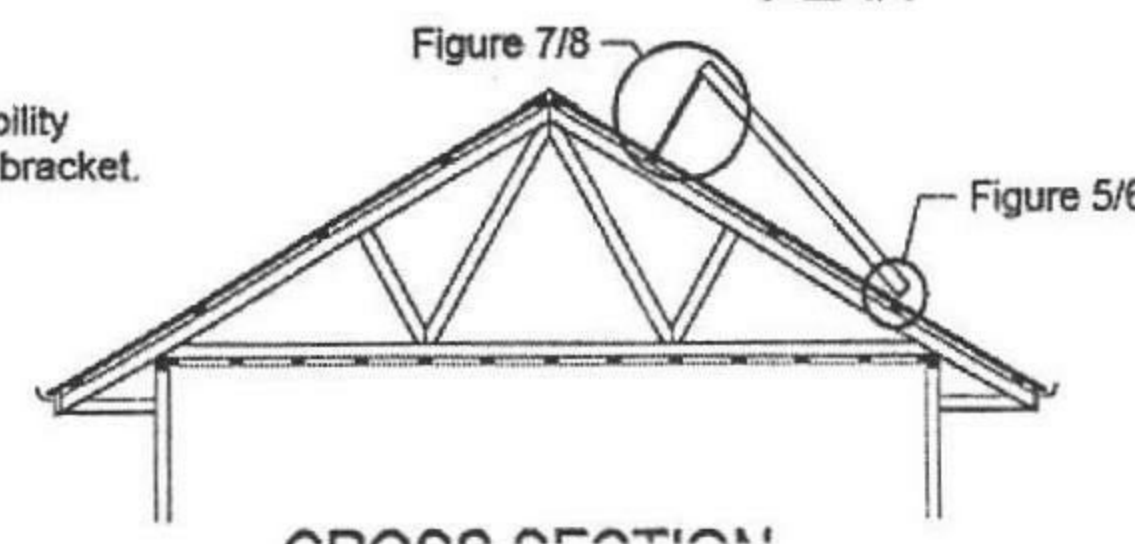
Figure 8



AXONOMETRIC



PLAN



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Drawing Package:

Panel Installations Onduline Corrugated Roofing

Drawing Title:

Panel Upper Fixing Roof Connection - Panel At Different Pitch To Roof

Drawing Scale(s) @A4:

1:100, 1:5

Date:

21.04.09

Checked:

MP

Revision:

H - 03.08.10

Drawing Number:

B-04

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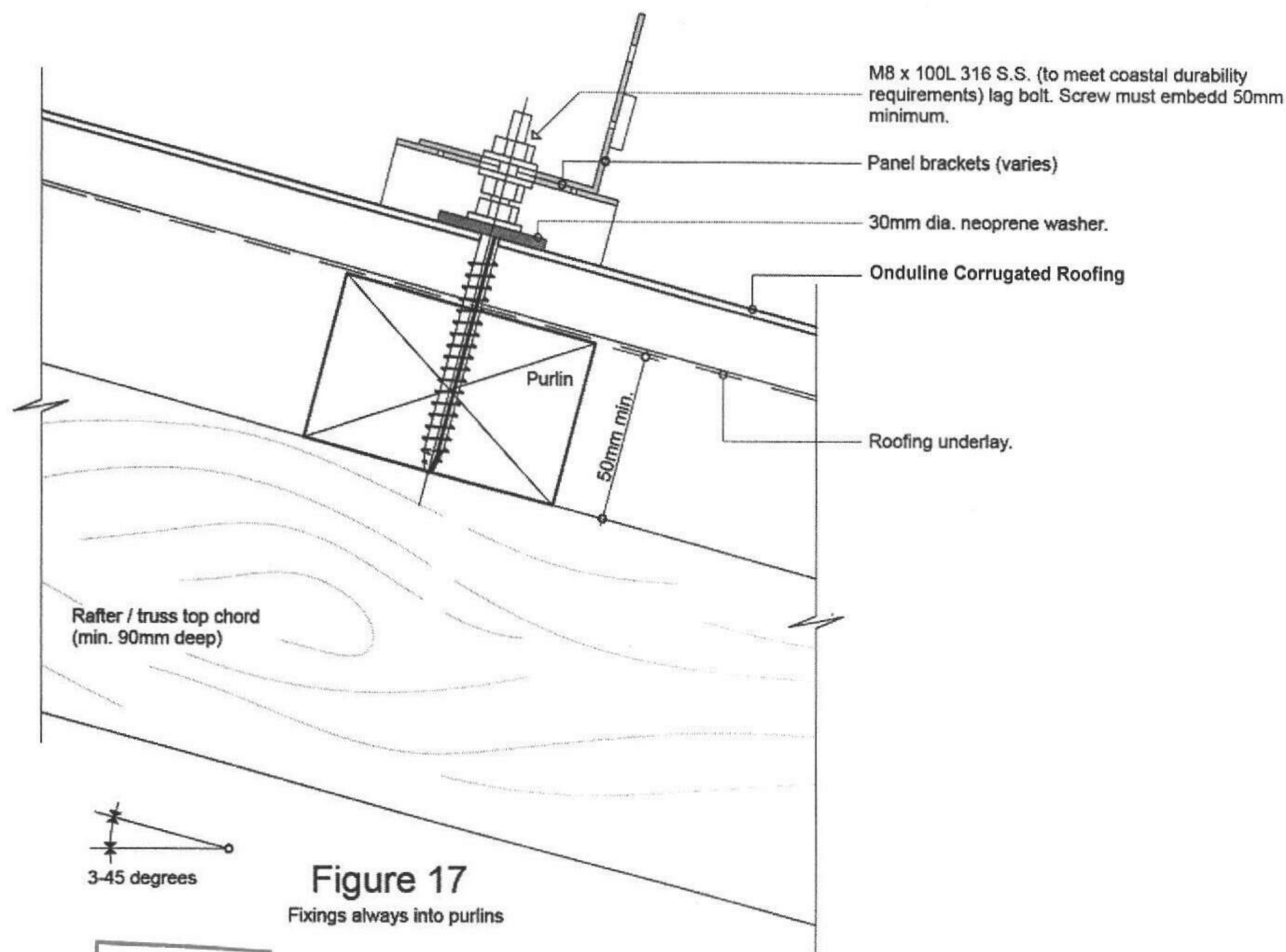


Figure 17
Fixings always into purlins

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Drawing Package:

Panel Installations

Onduline Corrugated Roofing

Drawing Title:

Panel Fixing Detail Into Purlin

Drawing Scale(s) @A4: 1:2

Date: 21.04.09

Checked: MP

Revision: H - 03.08.10

Drawing Number:

B-07

Nova Energy Solar Limited
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energy

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Drawing Package:

Pipe Penetration Details Onduline Corrugated Roofing

Drawing Title:

Pipe Penetration - Longrun Roofing

Drawing Scale(s) @A4: NTS

Date: 21.04.09

Checked: MP

Revision: H - 03.08.10

Drawing Number:

H-01

Nova Energy Solar Limited
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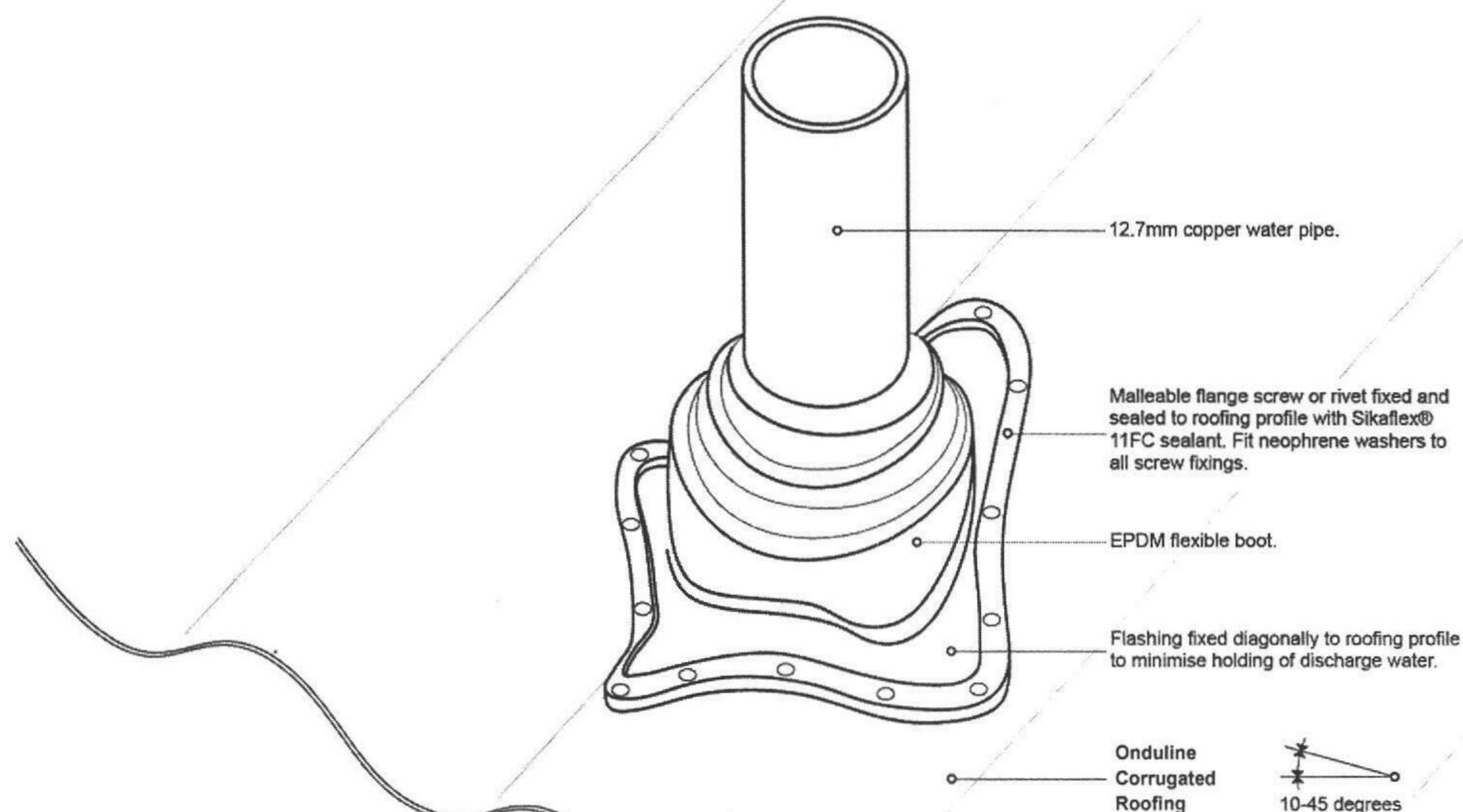


Figure 70

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29 OCT 2012



VIPAC ENGINEERS & SCIENTISTS

Vipac Engineers & Scientists Limited

A.B.N. 33 005 453 627

The Victorian Technology Centre
279 Normanby Road, Port Melbourne, VIC, 3207, AUSTRALIA
Telephone +61 3 9647 9700, Facsimile +61 3 9646 4370, www.vipac.com.au

Doc: 412812-1

Ref: 30S-08-0002-SOW-412812-1

27th November 2008

Todd Energy
PO Box 3141
95 Customhouse Quay Wellington, New Zealand
Attention: Dudley Maritz

Todd Energy K-series collector testing to AS/NZS 2712:2007

Dear Dudley Maritz

I hereby inform you that we have completed all the required testing on your K250L hot water system and K-250L solar collector.

You can certify the collector K-series, L type to AS/NZS 2712:2007.

Please contact me if you have any further queries regarding the test results.

Yours sincerely

Kumar Lingam
Kumarl@Vipac.com.au

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29 OCT 2012

Melbourne • Sydney • Adelaide • Perth • Brisbane • Hunter Valley • Tasmania • Singapore • Dubai • Hong Kong

Commercial In Confidence



TEMPERING VALVE

Application

- High and low pressure hot water systems

Standards

- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4617:1989
- NZ Patent No. 517764, Aust. Patent No. 2003200856
- RSA. Patent No. 2003/1992

Specifications

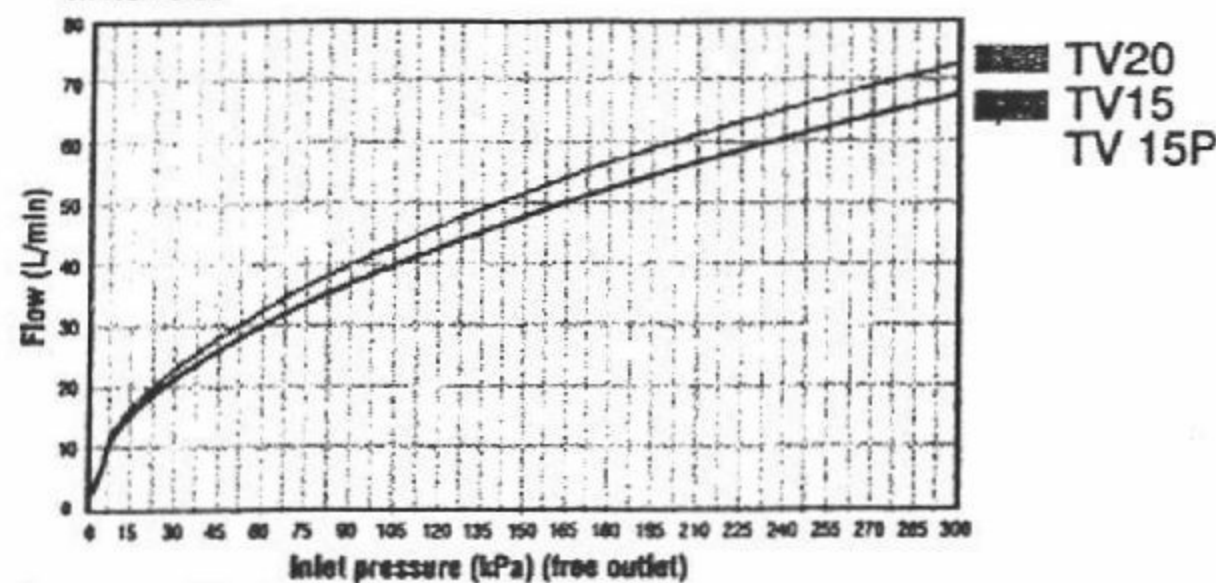
- Length:

TV15	110mm
TV20	105mm
TV20D	130mm
TV12	110mm
- Thermostatically controlled safety valve to prevent scalding.
- Factory set to give 55°C outlet. Can be adjusted from 35°C to 60°C.
- Inlet hot water supply 65°C to 99°C.
- Inlet water pressures:

TV15.....	30 to 1000 kPa (3m head)
TV20.....	20 to 1000 kPa (2m head)
- Flow rates:

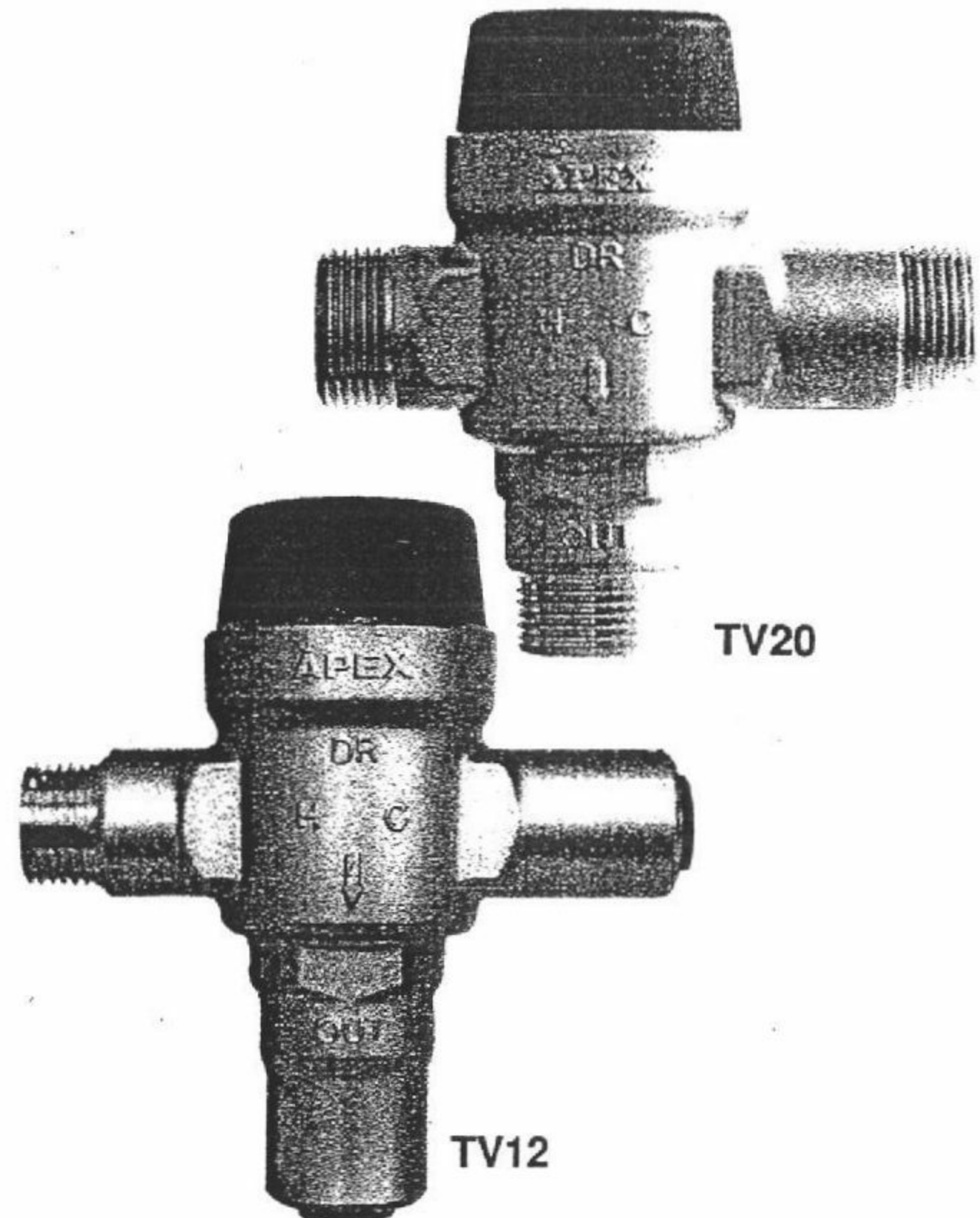
TV15.....	20 L/min at 20 kPa inlet pressure.
TV20.....	20 L/min at 20 kPa inlet pressure.
- Operating Pressure:

Balanced hot and cold pressure. For unequal water pressure of up to 5:1 (Cold to Hot), non-return must be fitted to hot inlet.
- Extremely high flow rate makes the TV20 suited to low pressure systems.
- TV15P, designed for installation within close proximity to bathroom fixtures.



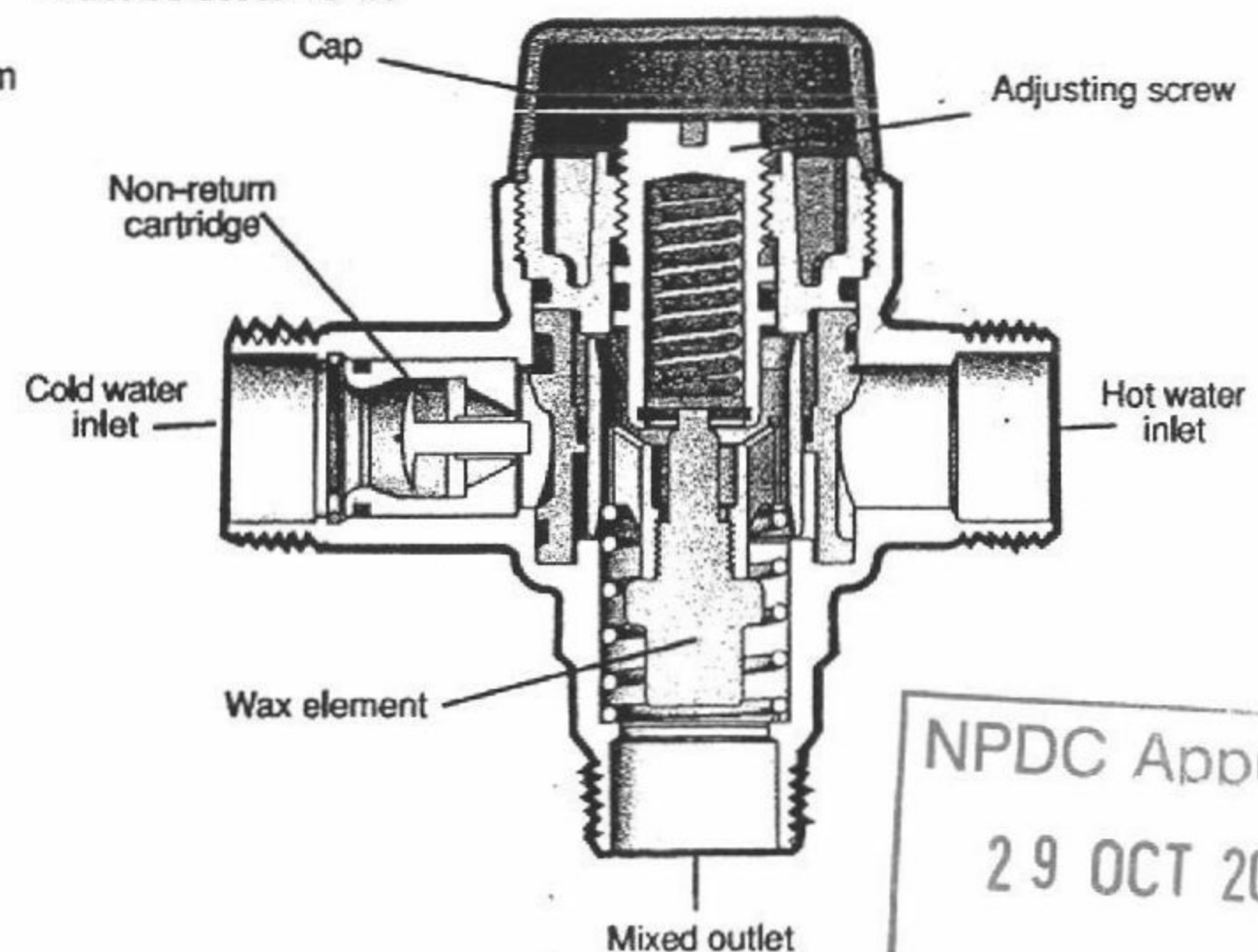
Installation

- Refer page 19 for installation guide
- Valve must be fitted by a qualified plumber.
- Installation must comply with local authority requirements.
- Valve may be installed in any orientation.
- Flush pipes prior to fitting.
- Valve must be protected by a line strainer.
- Non-return valves are required at hot and cold inlets in Ring Main Installations.
- Connections are H (hot inlet), C (cold inlet) and OUT (mixed temperature outlet).
- Do not apply heat near valve during installation - this may damage the mechanism.
- Do NOT install valve directly into outlet of cylinder.
- Use TV15P at point of use.



Temperature Adjustment

Remove cap. Use screwdriver to adjust to desired temperature. To increase, turn anti-clockwise (H). To decrease, turn clockwise (C). Replace cap. Maximum delivered hot water temperature at any sanitary fixture used for personal hygiene shall not exceed 55°C. For childhood centres, schools, old peoples homes and hospitals, outlet must be set to 45°C.



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Product Codes

TV15	15mm
TV15P	15mm Point of use Tempering Valve
TV20	20mm
TV20D	20mm Ring main installation (Non-return on both inlets)
TV12	15mm BSP Hot
	12mm John Guest cold and Mix

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Drawing Package:
Schematics

Drawing Title:
**Open Loop Solar - Retrofit
Mains Pressure Cylinder**

Drawing Scale(s) @A4: NTS

Date: 21.04.09

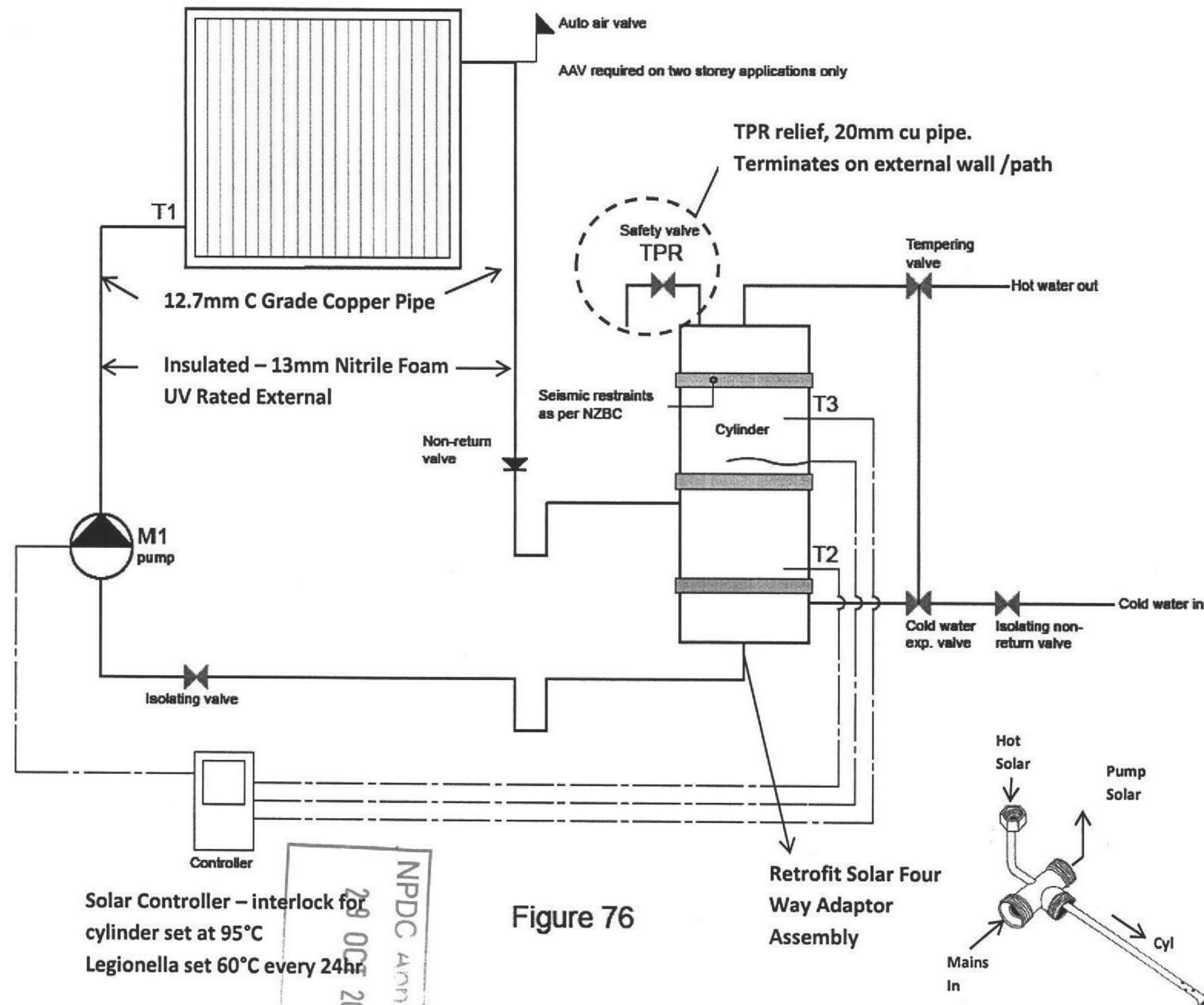
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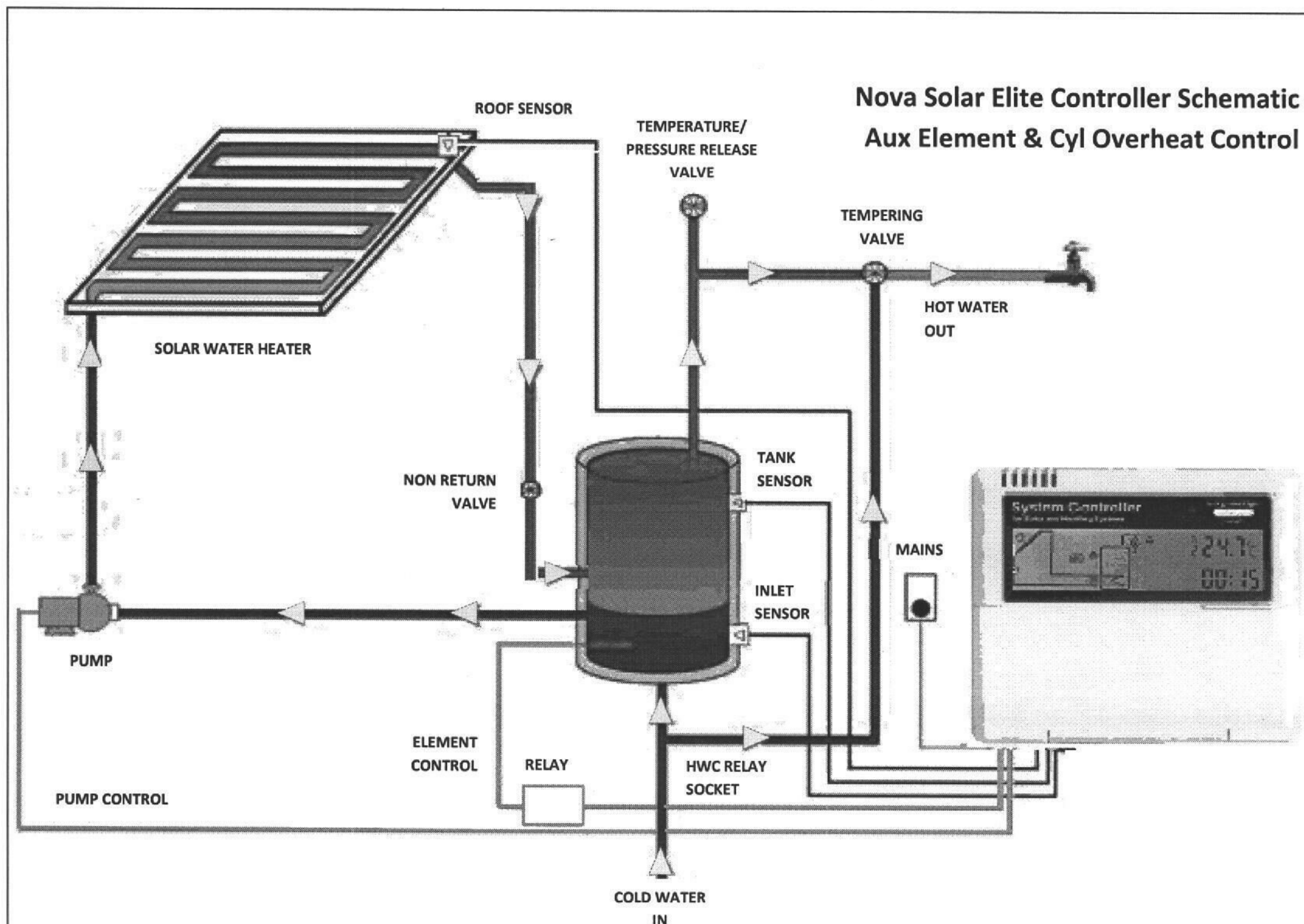
Revision: H - 03.08.10

Drawing Number:
J-01

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energy





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Drawing Package:

Schematics

Drawing Title:

Solar Controller

Mains & Low Voltage

Drawing Scale(s) @A4: NTS

Date: 21.04.09

Checked: MP

Revision: H - 03.08.10

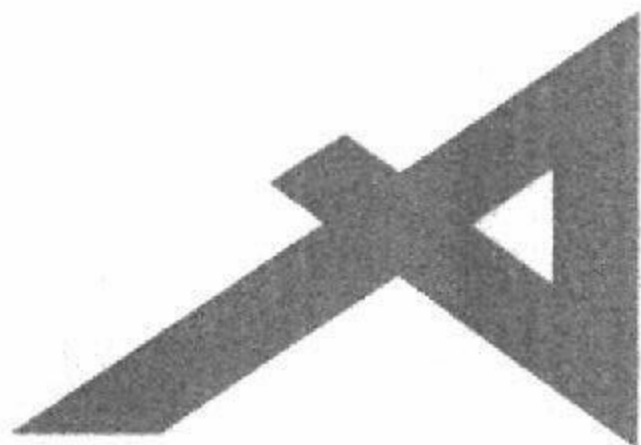
Drawing Number:

Nova Energy Solar Limited
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P 07 578 5281, 0800 668 276, F 07 571 2074
solar@novaenergy.co.nz

nova
energy

Note. This diagram is only to be used as a general guide and not all the required components are shown. Each Installation needs to be customised to suit its situation. Always use best plumbing practices, and comply to any regulatory requirements.

WDC Approved
9 OCT 2012



BRANZ Appraised
Appraisal No.709 [2010]

BRANZ Appraisals
Technical Assessments of products
for building and construction

**BRANZ
APPRAISAL
No. 709 [2010]**

ARMAFLEX DUOSOLAR AND SOLAR PIPE INSULATION

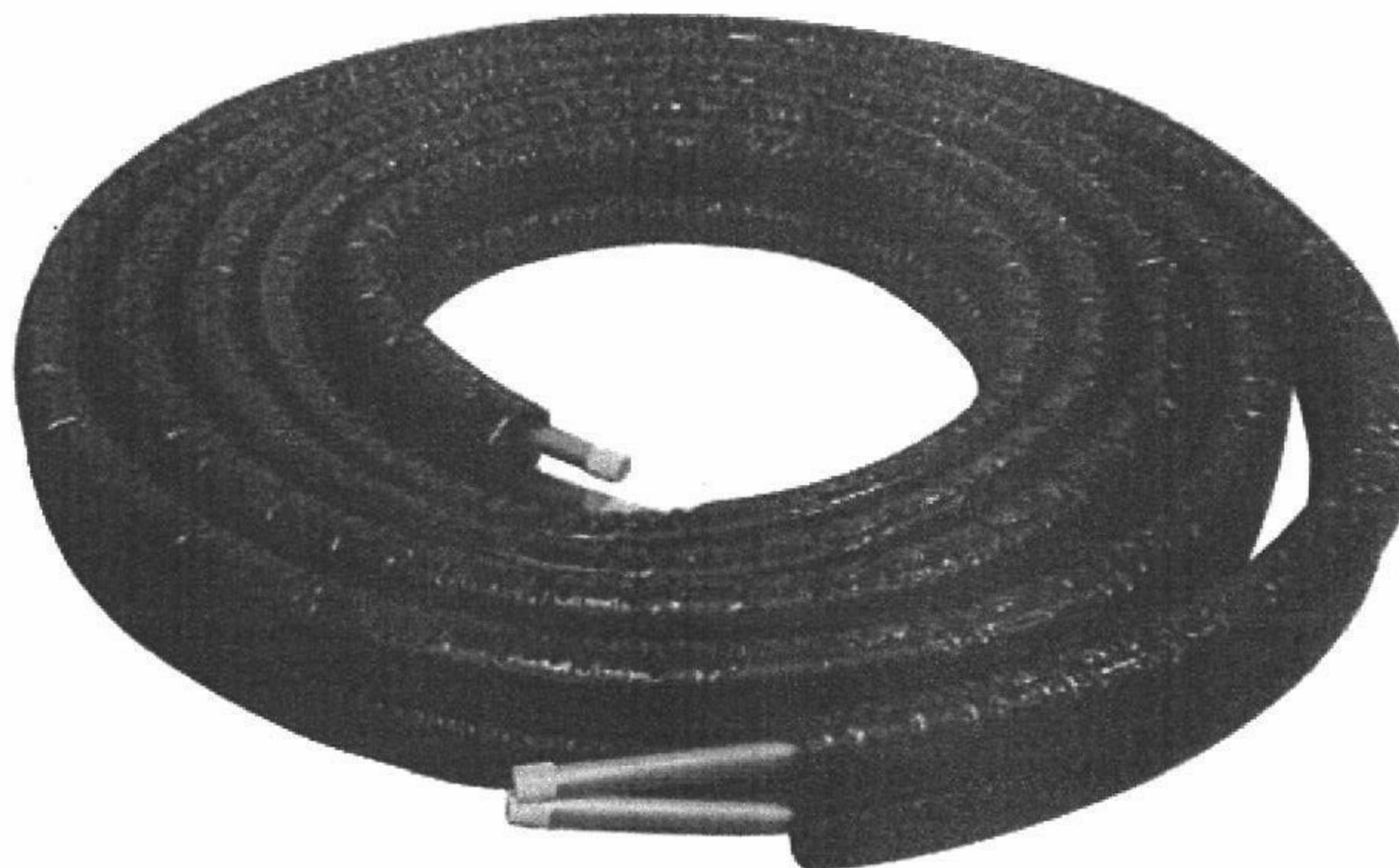
Armacell Australia Pty Ltd
PO Box 5202
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Victoria 3803
Australia

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Fax: +61 3 8710 5900
Web: www.armacell.com.au
Email: info.au@armacell.com


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Private Bag 50 908
Porirua City
New Zealand
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Fax: +64 4 237 1171
www.branz.co.nz



1.1 Armaflex DuoSolar and Solar is pre-insulated pipe-work and pipe insulation for solar hot water heating systems.



 **armacell**
advanced insulation

THE MAKERS OF
Armaflex

2.1 Armaflex DuoSolar and Solar have been appraised as pipe insulation for solar water heaters complying with AS/NZS 3500.4.
2.2 Installation of DuoSolar pre-insulated pipe-work supplied by Armacell Australia Pty Ltd must be carried out only by a qualified and registered plumber.

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Building Code of Australia (BCA 2010)

3.1 In the opinion of BRANZ, Armaflex DuoSolar and Solar if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet or contribute to meeting the following provisions of the BCA 2010:

BCA 2010 Volume 1 - Class 2 to Class 9 Buildings

Section J - Energy Efficiency: Performance Requirement JP1. Armaflex DuoSolar and Solar Pipe Insulation contribute to meeting this requirement. See Paragraphs 13.1 – 13.3.

BCA 2010 Deemed-to-Satisfy Provisions

Armaflex DuoSolar and Solar Insulation can be used to meet the provisions of Deemed-to-Satisfy Provisions J7.2 Hot water supply. See Paragraphs 13.1 – 13.3.

BCA 2010 Volume 2 – Class 1 and Class 10 Buildings – Housing Provisions

Part 2.6 Energy Efficiency: Performance Requirement P2.6.2 (a). Armaflex DuoSolar and Solar Pipe Insulation contribute to meeting this requirement. See Paragraphs 13.4 – 13.6.

3.2 This is an appraisal of an **Acceptable Solution** in terms of Building Code of Australia compliance.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

New Zealand Building Code (NZBC)

3.3 In the opinion of BRANZ, Armaflex DuoSolar and Solar Pipe Insulation if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet or contribute to meeting the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1(c) 5 years and B2.3.2. Armaflex DuoSolar and Solar Pipe Insulation meets these requirements. See Paragraph 8.1.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Armaflex DuoSolar and Solar Pipe Insulation meets this requirement and will not present a health hazard to people.

Clause G12 WATER SUPPLIES: Performance G12.3.2(c). Armaflex DuoSolar and Solar Pipe Insulation contribute to meeting these requirements. See Paragraphs 11.1.

Clause H1 ENERGY EFFICIENCY: Performance H1.3.4 (a) and (b). Armaflex DuoSolar and Solar Pipe Insulation contribute to meeting these requirements. See Paragraph 14.1.

3.4 This is an appraisal of an **Acceptable Solution** in terms of New Zealand Building Code compliance.

Description

4.1 Armaflex DuoSolar and Solar pipe insulation comprises a black EPDM foam core, with an outer surface of polyethylene (PE) film.

4.2 Armaflex DuoSolar is a pair of insulated copper pipes. The insulation is 15 mm thick. DuoSolar is used to connect solar collectors with the hot-water storage tank. The copper pipe-work is supplied by SmartCo Pty Ltd, which is certified by WaterMark Licence No. WMKA21097 to AS 1432:2004. SmartCo Pty Ltd copper tube has been tested to AS/NZS 4020 and is suitable for drinking water.

4.3 Armaflex Solar is single insulation tubes, without copper, for insulating the flow and return lines of solar hot-water systems. The tubing is dusted to provide ease of fitting. The insulation is either 15 or 22 mm thick.

4.4 Armaflex DuoSolar and Solar Pipe Insulation are available in the sizes as set out in Tables 1 and 2.

Table 1: Armaflex DuoSolar (paired 15mm thick insulation pre-fitted to SmartCo Pty Ltd copper piping)

Pipe Size	Coil Length	Product Description
DN15 (1/2")	10 m	DuoSolar 15 x 12 10m coil
DN15 (1/2")	15 m	DuoSolar 15 x 12 15m coil
DN20 (3/4")	10 m	DuoSolar 15 x 20 10m coil
DN20 (3/4")	15 m	DuoSolar 15 x 20 15m coil

Table 2: Armaflex Solar Insulation (single coils of solar insulation supplied without copper)

Pipe Size	Insulation Thickness	Coil Length	Product Description
DN15 (1/2")	15 mm	25 m	Solar Tube 15 x 12 25m coil
DN20 (3/4")	15 mm	20 m	Solar Tube 15 x 20 20m coil
DN25 (1")	15 mm	15 m	Solar Tube 15 x 25 15m coil
DN15 (1/2")	22 mm	15 m	Solar Tube 22 x 12 15m coil
DN20 (3/4")	22 mm	10 m	Solar Tube 22 x 20 10m coil

Handling and Storage

5.1 Armaflex DuoSolar and Solar components must be handled and stored with care to prevent damage. They must be stored flat and kept clean and free from contaminants.

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Armaflex DuoSolar and Solar. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

General

7.1 Solar water heater systems must be designed and installed in accordance with the requirements of AS/NZS 3500.4. In New Zealand designers and installers must note the modifications to AS/NZS 3500.4 in NZBC Acceptable Solution G12/AS2. Specific design installations may be designed in accordance with AS/NZS 3500.1 and AS/NZS 3500.4.

7.2 Provision for tube expansion and contraction should be allowed for in the design of the system to accommodate these forces on all fittings and fixtures.

7.3 Copper piping should not be placed in direct contact with metal roofs or cladding, due to the potential for corrosion of the roofing or cladding material.

7.4 Armaflex DuoSolar contains metallic piping and therefore equipotential bonding must be carried out in accordance with:

- AS/NZS 3500.1 Section 5.2 for Australia
- NZBC Acceptable Solution G12/AS1 Paragraph 9.0 for New Zealand.

Durability

Service Life

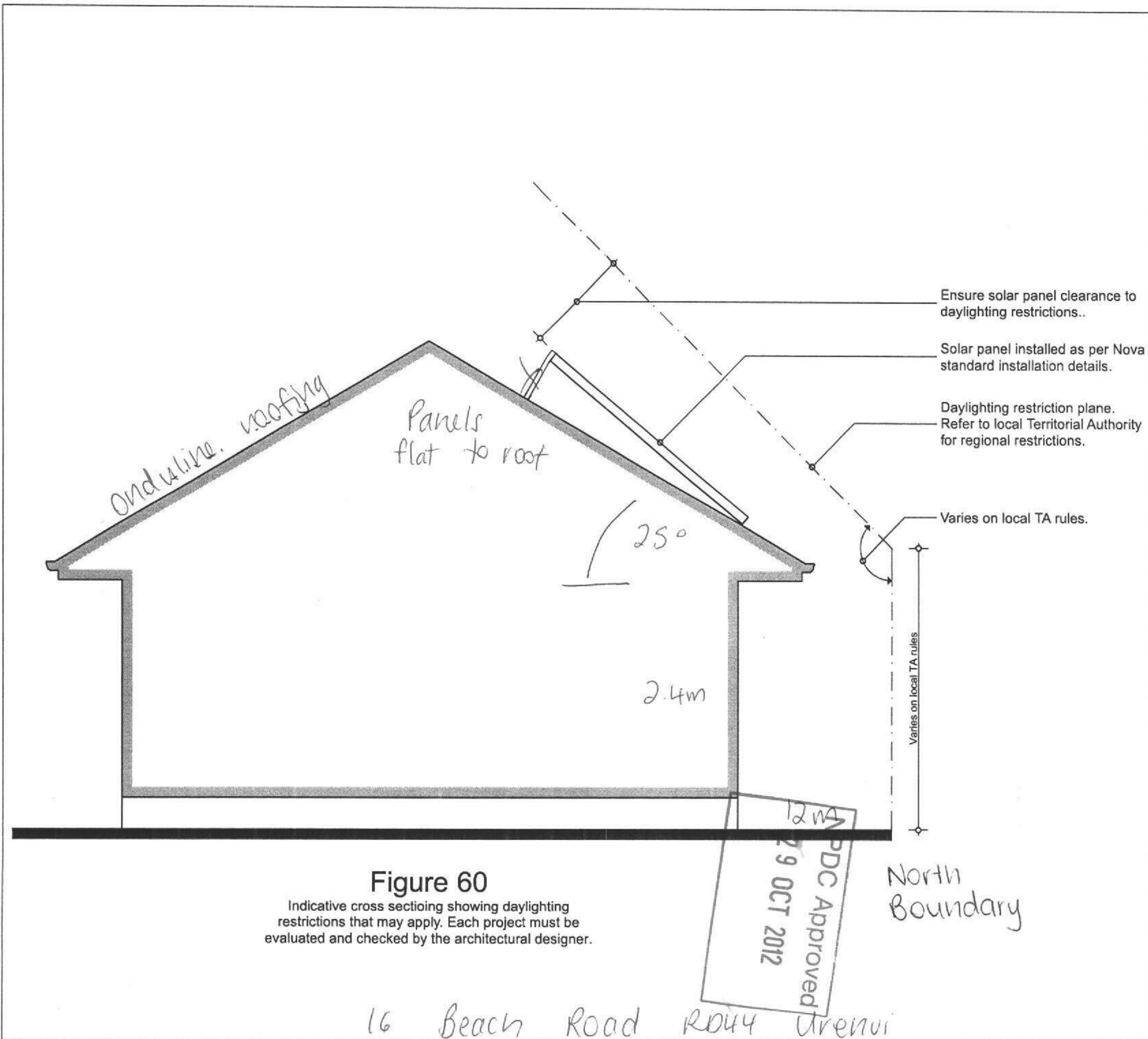
8.1 When the in-service pipe-work temperatures are limited as described by Table 3, Armaflex DuoSolar and Solar pipe insulation are expected to have a service life of at least six years. To ensure the durability of the insulation, the pipe-work temperature must not exceed 150°C at any time.

Table 3: Maximum Pipe-work Temperature Exposure Limits per Year

Pipework Temperature	Maximum Hours per Year
<80°C	No limit
80 - 99°C	50
100 - 119°C	37
120 - 139°C	28
140 - 150°C	21

Maximum hours per year is based on modelling of a typical domestic solar water heating system, with worst-case frequencies of extreme temperature.

The maximum hours reflects pipe temperatures at the collector outlet for Alice Springs (hottest climate and worst case) and an evacuated tube collector (highest temperature system).



This drawing remains property of Nova Energy Solar Limited.

NOTE: All details and specifications are indicative only and are subject to change without notice. All Nova Energy Solar system are to be installed by approved contractors only.

Systems designed within these documents are applicable up to and including Very High wind zones. For Specific Design wind zones, consult Nova Energy Solar.

Drawing Package:

Standard Installation Details

Drawing Title:

Daylighting Restriction Diagram

Drawing Scale(s) @A4: 1:50

Date: 21.04.09

Checked: MP

Revision: B - 25.05.09

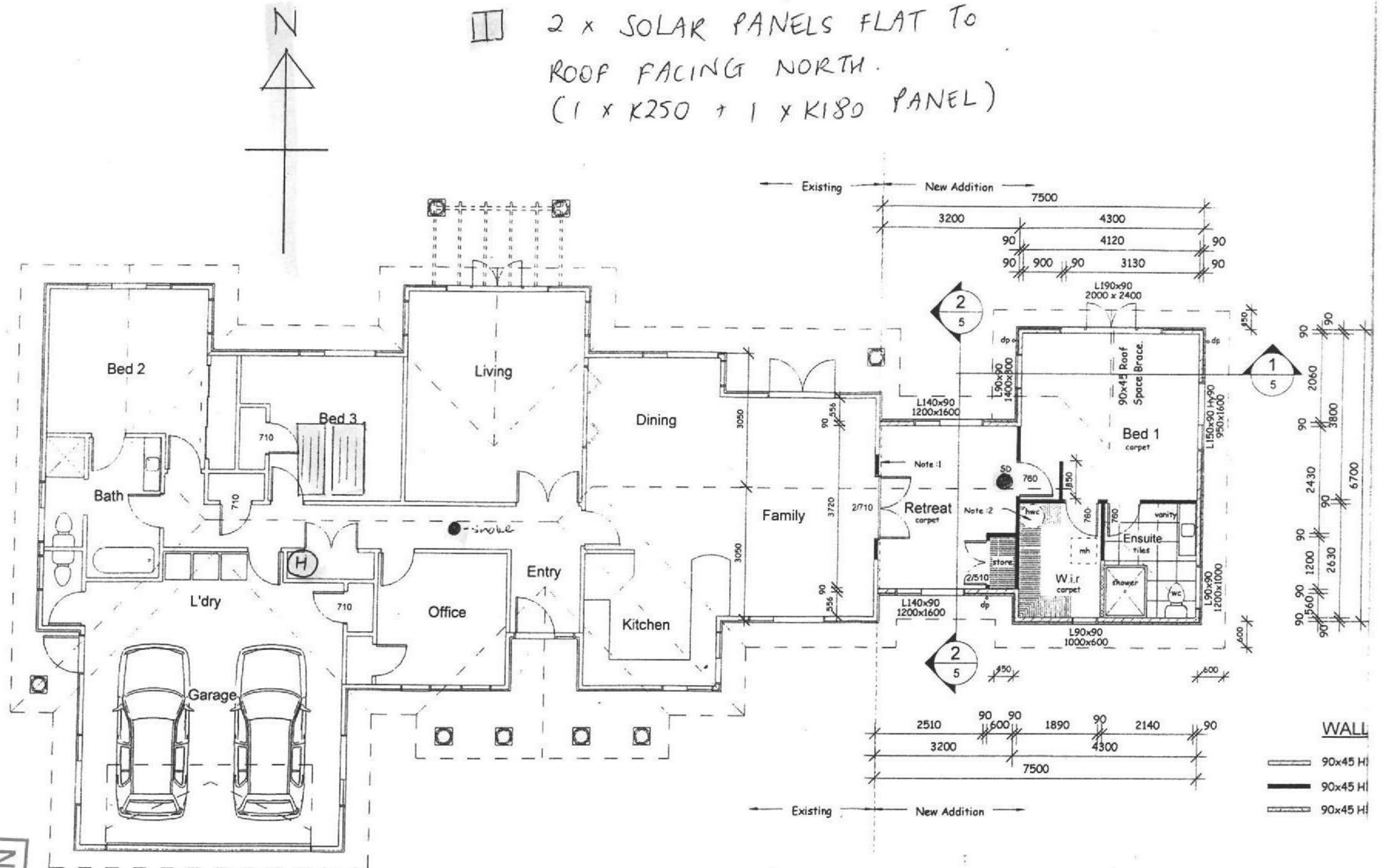
Drawing Number:

F-05

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07 578 2754, 0800 668 276
solar@novaenergy.co.nz

nova
energy

CHECK ALL DIMENSIONS



NPDC Approved
29 OCT 2012



Te Kaunihera-ā-Rohe o Ngāmotu
NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

Building Consent No: BC12/114080
Section 51, Building Act 2004

Building

Street address of building: 16 Beach Road URENUI 4655

Legal description of land where building is located: LOT 1 DP 324159

Building name: Dwelling

Owner

Name of owner: Deborah Joy MOONEY, Kenneth Ronald MARTIN, John Dennis WHITE

Applicant: Nova Energy Solar Ltd

Applicant contact address: PO Box 2310, TAURANGA 3140

Ph (work): 0800 668 276

Fax: 07 571 2074

Email address: mwatts@novaenergy.co.nz

Building work

The following building work is authorised by this consent:

Project: Install 2 x solar panels retrofitted to 300L mains pressure hot water cylinder

Intended use: Residential hot water heating system

This building consent is issued under section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building).

This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

This building consent is subject to the following conditions:

Additional Conditions

There are no conditions relating to this Building Consent.

1. Inspections

All inspections are to be carried out by BCA Building Inspectors unless prior arrangements have been made by the BCA to have an approved qualified person inspect specific items.

Inspections shall be carried out in accordance with the attached schedule of inspection types. It is the owner's responsibility to ensure all necessary inspections are carried out as required.

Please contact NPDC if you are unsure what requires inspection – do not cover or enclose any building work without inspection.

2. Durability of Building Elements

Building elements may have an intended life of less than 50 years. Limited life building elements carry certain limitations and obligations. Based on current legislation these obligations require the building owner to follow the normal and/or scheduled maintenance of the building element to ensure its continued compliance with the New Zealand Building Code (NZBC). Where failure to properly maintain the building elements results in non-compliance with the NZBC, the Territorial Authority may issued a "Notice to Fix" which if not met could result in legal action appropriate in the circumstances.

3. Construction and Demolition Noise

The proposed New Plymouth District Plan, appendix 12, clause 1.1 - 1.4 sets construction and demolition noise standards. Anyone carrying out building work must ensure they comply with these noise levels at all times. These standards may be obtained from the council's website or by contacting the Council.

4. Lapse and Cancellation of Consents

A Building Consent lapses and is of no effect if the building work to which it relates does not commence within 12 months after the date of issue of the building consent or any further period that the Building Consent Authority may allow. (Time extensions to commence building work after 12 months must be submitted to the Building Consent Authority in writing stating the reason for the request, prior to the lapse date of the consent.

5. Additional Costs

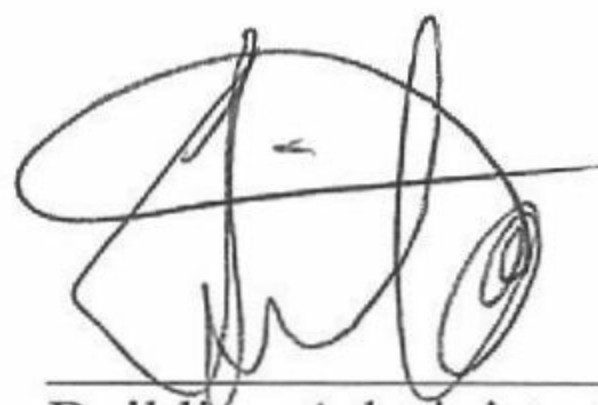
Building Consent fees are required to be paid prior to a Building Consent being issued. Once the project commences actual costs are charged against the fees paid. In some instances the base fee may be exceeded due to amendments, extra inspections or other time spent because of project complexity. These additional costs will be charged.

6. Completion of Building Project

A Code Compliance Certificate must be applied for as soon as practicable after the building work is completed. A building consent is valid for two years after the date on which the building consent was granted. An extension of time may be considered if required, application for this time extension must be made in writing explaining reasons for the request prior to the consent lapsing.

Compliance Schedule

A Compliance Schedule is not required for the building.



Building Administration Officer

Date: 29 October 2012