

22657VIC Course in Working Safely on Rooftop Renewable Energy Systems

Version 1

**This course has been accredited under Part 4.4 of the
*Education and Training Reform Act 2006.***

Accredited for the period: 1 July 2024 to 30 June 2029

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Section A – Copyright and course classification information

1. Copyright owner of the course	© State of Victoria (Department of Jobs, Skills, Industry and Regions) 2024
2. Address	<p>Executive Director</p> <p>Higher Education and Workforce Skills and Employment Department of Jobs, Skills, Industry and Regions (DJSIR) GPO Box 4509 Melbourne Vic 3001</p> <p>Organisational Contact:</p> <p>Manager, Training and Learning Products Unit Higher Education and Workforce Skills and Employment Department of Jobs, Skills, Industry and Regions Telephone: 131823 Email: course.enquiry@djsir.vic.gov.au</p> <p>Day-to-day contact:</p> <p>Curriculum Maintenance Manager (CMM) Building Industries Holmesglen Institute PO Box 42 Holmesglen VIC 3148 Telephone: (03) 9564 1987 Email: teresa.signorello@holmesglen.edu.au</p>
3. Type of submission	This submission is for re-accreditation of 22515VIC Course in Working Safely in the Solar Industry
4. Copyright acknowledgement	<p>The following units of competency:</p> <ul style="list-style-type: none"> • CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry • CPCCCM2012 Work safely at heights • CPCWHS1001 Prepare to work safely in the construction industry <p>have been imported from the CPC Construction Plumbing and Services Training Package administered by the Commonwealth of Australia.</p> <p>© Commonwealth of Australia.</p> <p>The following units of competency:</p> <ul style="list-style-type: none"> • HLTAID011 Provide First Aid <p>has been imported from the HLT Health Training Package administered</p>



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6. Course accrediting body	Victorian Registration and Qualifications Authority
7. AVETMISS information	<p>ANZSCO code - 6 digit Australian and New Zealand Standard Classification of Occupations 312999 Building and Engineering Technicians nec</p> <p>ASCED Code - 4 digit Field of Education 0403 - Building</p> <p>National course code 22657VIC</p>



8. Period of accreditation	1 July 2024 to 30 June 2029
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Section B – Course information

1. Nomenclature	Standard 4.1 and 5.8 AQTF 2021 Standards for Accredited Courses
1.1 Name of the qualification	Course in Working Safely on Rooftop Renewable Energy Systems
1.2 Nominal duration of the course	64 nominal hours
2. Vocational or educational outcomes	Standard 5.1 AQTF 2021 Standards for Accredited Courses
2.1 Outcome(s) of the course	<p>The Course in Working Safely on Rooftop Renewable Energy Systems is designed to provide learners with the skill and knowledge required to:</p> <ul style="list-style-type: none"> • identify occupational health and safety (OHS) / work health and safety (WHS) hazards, risks and associated hierarchy of control measures, with particular emphasis on perimeter fall protection • evaluate and use safe roof access and entry points • identify and report asbestos and silica dust in the workplace • identify and implement safe manual handling methods for material and equipment usage at heights • identify sources of energy around roof spaces and follow workplace procedures to confirm isolation • apply first aid procedures • maintain and apply currency of renewable energy industry related regulations, standards and notices to market. <p>Graduates of the Course in Working Safely on Rooftop Renewable Energy Systems will enhance their capability as rooftop renewable energy practitioners by expanding their workplace safety awareness and practices to focus on risks specific to working within a rooftop context. Roles most suited to gaining these skills include:</p> <ul style="list-style-type: none"> • licensed electricians • licensed and registered plumbers • electrical and plumbing apprentices and trade assistants • technicians responsible for the installation, removal and inspection of solar photovoltaic (PV) panels and batteries • practitioners responsible for the maintenance of solar PV panels.
2.2 Course description	<p>The Course in Working Safely on Rooftop Renewable Energy Systems provides an accredited training program to enhance the safety capability of a range of rooftop solar practitioners working with small scale solar photovoltaic (PV) systems located fully or partially on roofs of residential and commercial premises.</p> <p>On completion of the course, graduates will have the skills and</p>



	<p>knowledge required to apply safe work practices to rooftop solar activities associated with the installation, fixing and removal of solar PV panels, batteries and heated water systems with heat pumps, water pipe relocation to support solar heated water installation and the maintenance and cleaning of solar PV panels. The course does not provide technical training regarding rooftop solar activities, rather it focuses on safety requirements when preparing or undertaking rooftop solar activities.</p>
<p>3. Development of the course</p>	<p>Standards 4.1, 5.1, 5.2, 5.3 and 5.4 AQTF 2021 Standards for Accredited Courses</p>
<p>3.1 Industry, education, legislative, enterprise or community needs</p>	<p>The use of solar energy systems supports Australia’s energy policy, and assists the achievement of emissions targets on a State and Federal level. The Solar Homes program was created in 2018 as a key initiative in the Victorian government’s commitment to reduce energy costs, boost energy supply, create new jobs in the renewables sector and address climate change¹. The program has a 10-year, \$1.3 billion budget allocation, and provides consumers with access to small-scale solar panels, batteries and heated water systems². Uptake has been strong. As at 31 December 2020, there were approximately 2.7 million homes nationally with installed rooftop solar systems operating. Victoria represented 21% of those systems. The Australian PV Institute Media release 16 Aug 2022 noted “Australia retains its place in the top ten markets for new solar installs, and total solar installations”, adding that “the number of Australian homes powered by the sun continues to grow”.</p> <p>Electrical water heating is the largest single source of greenhouse gases from the average Australian home, producing almost a quarter of household emissions³. The installation of 72,953 solar water heating systems nationally in 2020 was the highest number since 2011, taking the total installed across the country to more than 1.3 million units. In 2020, Victoria continued to be the leading state for solar water heating installations, with more than 36,000 systems installed throughout the year⁴. In April 2021, Solar Victoria estimated that the Solar Homes program created 4,711 jobs⁵. Demand for this form of renewable energy</p>

¹ Victorian Auditor General’s Office, *Delivering the Solar Homes Program*, June 2021 ,p.15

² <https://www.audit.vic.gov.au/report/delivering-solar-homes-program?section=#:~:text=In%20August%202018%2C%20the%20government,bills%20and%20lower%20carbon%20emission> S.

³ [Solar water heating | Clean Energy Council](#)

⁴ [Solar water heating | Clean Energy Council](#)

⁵ Victorian Auditor General’s Office, *Delivering the Solar Homes Program*, June 2021 ,p.9



is expected to continue. In recognition of solar energy sector growth, the Victorian Government invested \$2.1 million dollars to upgrade Holmesglen Institute's Moorabbin and Drummond Street solar training campuses, creating customised facilities for solar workers to learn in an environment that simulates a variety of job sites⁶.

An accreditation scheme exists through the Clean Energy Council for solar photovoltaic (PV) panel and battery installers to participate in the Solar Homes program⁷. Requirements also apply to hot water installers participating in the Solar Homes program⁸. Accreditation requires participants to undertake mandated and recommended training related to working safely in the solar industry, with an emphasis on rooftop safety. This course is the basis for that training.

The target group for the course is broad as solar related work activity on rooftops is varied. Primarily, the cohort focuses on those preparing, installing and removing rooftop PV product (solar, battery and hot water) as part of the Solar Homes program administered by Solar Victoria. This includes on site installers and other onsite workers including:

- licensed electricians, registered plumbers, trade apprentices and trade assistants responsible for solar PV, battery and hot water installation and removal, and water pipe relocation
- heat pump installers and other heat pump workers
- practitioners currently employed, or seeking to be employed to position and fix solar product in preparation for installation /connection.

On site solar PV workers who maintain solar PV panels are excluded from mandatory training requirements, however Solar Victoria recognises that course participation by this cohort would support safe work practices and promote a safe work environment⁹.

This is the second iteration of the course. Course need was identified by the Office of the Victorian Skills Commission and course development and maintenance managed by Box Hill Institute. The course was first accredited in 2019 and piloted for two (2) years at four (4) training locations. Since being added to the Free TAFE Short Course List from 1 July 2022, uptake has been strong, with twelve (12) TAFEs (including seven in regional Victoria) offering the training¹⁰. Course enrolment data from 1 July 2019 to 2022 is displayed in Table 1.

Source: Department of Jobs, Skills, Industry and Regions data

Table 1: Victorian Course Enrolments

⁶ <https://www.lilydambrosio.com.au/media-releases/more-solar-training-with-free-tafe-short-courses/> as viewed 11 October 2022

⁷ <https://www.solar.vic.gov.au/become-approved-provider>

⁸ <https://www.solar.vic.gov.au/become-authorized-hot-water-retailer-or-installer>

⁹ Solar Victoria Notice to Market 2022-2023, republished May 2022, p.18.

¹⁰ [More solar training with free TAFE short courses | Solar Victoria](#)



Year	Government subsidised enrolments	Fee paying enrolments	Total enrolments
2019	0	58	58
2020	708	730	1438
2021	838	719	1557
2022	130	841	971

Course enrolments trended upward from 2019, peaking in 2021 and declining in 2022, largely due to a fall in government subsidised training. Fee paying enrolments continue to rise however, indicating cohort preparedness to fund their skill development based on industry need. As this course supports Victoria's demand for solar product, course demand is expected to continue into the future.

The project for the development of the Course in Working Safely on Rooftop Renewable Energy Systems was overseen by a project steering committee (PSC) comprised of the following industry and RTO representatives:

Mick Cullen (Chair)	Future Energy Skills
Anita Smith	Department of Environment, Land, Water and Planning (DELWP)
Brian Chamberlin	Worksafe
Michael Weekes	National Electrical and Communications Association (NECA)
Sandy Atkins	Energy Safe Victoria
Brendan Gould	Master Plumbers Association
Shane Clayton	Future Energy Skills
Jacob Fevreau	RACV Solar
Robbie Nichols	Green Earth Electrical
Ross Digby	Holmesglen Institute
In attendance	
Teresa Signorello	CMM Manager, Building Industries Holmesglen Institute
Susan Fechner	Senior Project Officer, Building Industries Holmesglen Institute



Desktop research was undertaken to identify industry trends, skill and knowledge requirements, and currency of unit of competency content. Members of the PSC met formally on three occasions to review and confirm the required skill and knowledge outcomes of the course, course structure and final accreditation submission.

This course:

- does not duplicate, by title or coverage, the outcomes of an endorsed training package qualification
- is not a subset of a single training package qualification that could be recognised through one or more statements of attainment or a skill set
- does not include units of competency additional to those in a training package qualification that could be recognised through statements of attainment in addition to the qualification
- does not comprise units that duplicate units of competency of a training package qualification.

3.2 Review for re-accreditation

The course was allocated to the CMM Building Industries portfolio in late 2022, therefore course monitoring could not be undertaken by the CMM service prior to that time.

Course structure and unit content was reviewed during the accreditation process. The course title was reviewed and broadened to allow for future application of multiple energy sources. An evaluation of the UEE Electrotechnology Training Package unit UEERE0049 Apply safe work practices in the rooftop solar industry, released 14 October 2021, was undertaken by the PSC to determine unit outcome alignment to industry need. The PSC advised a contextualised rooftop focus was required in relation to the following safety hazards:

- manual handling at heights
- existence of asbestos material (friable and non-friable)
- roof access and entry activity
- live energy sources, particularly around roof spaces.

Emphasis was also placed on fall risk and the associated hierarchy of fall controls, and the importance of guard rails as a form of fall prevention. Mapping of these items to the unit UEERE0049 Apply safe work practices in the rooftop solar industry, revealed generic address which was deemed unsuitable by the PSC. Modification was therefore made to the enterprise unit VU23631 Work safely on roofs with renewable energy systems, during the reaccreditation process to incorporate PSC safety requirements and confirm alignment of skill and knowledge needs to course cohort.

The 226571VIC Course in Working Safely on Rooftop Renewable Energy Systems supersedes and is equivalent to 22515VIC Course in Working Safely in the Solar Industry.

226571VIC Course in Working Safely	22515VIC Course in Working Safely	Relationship
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on Rooftop Renewable Energy Systems	in the Solar Industry	
VU23631 Work safely on roofs with renewable energy systems	VU22744 Work safely in the solar industry	Equivalent
CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry	CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry	No change
CPCCCM2012 Work safely at heights	CPCCCM2010B Work safely at heights	Equivalent
CPCWHS1001 Prepare to work safely in the construction industry	CPCCWHS1001 Prepare to work safely in the construction industry	Equivalent
HLTAID011 Provide First Aid	HLTAID011 Provide First Aid	No change

4. Course outcomes	Standards 5.5, 5.6 and 5.7 AQTF 2021 Standards for Accredited Courses
4.1 Qualification level	This course meets an identified industry and community need, but does not have the breadth, depth or volume of learning of a qualification.
4.2 Foundation skills	Foundation skills applicable to the outcomes of this course are identified in the performance criteria or within the Foundation Skills section of the units of competency where not explicit in the performance criteria.
4.3 Recognition given to the course (if applicable)	<p>Mandatory unit completion requirements apply for participation in Solar Victoria’s Solar Homes Program. Those mandatory units form part of this course. Refer Solar Victoria training requirements here.</p> <p>Completion of:</p> <ul style="list-style-type: none"> • VU23631 Work safely on roofs with renewable energy systems, is mandatory for all on site installers and other onsite workers (excluding heat pump installers and heat pump workers) • CPCWHS1001 Prepare to work safely in the construction industry, is mandatory for all on site workers. <p>Workers who maintain solar PV panels are not subject to mandatory training requirements, however it is recognised that participation in the training would support a safe work environment.</p>



It is noted that participation in the Course in Working Safely on Rooftop Renewable Energy Systems is not required for accreditation as an installer by the Clean Energy Council (CEC), however it is required for those installers who want to participate in the Solar Victoria Solar Homes Program.

4.4 Licensing/regulatory requirements (if applicable)

There are no licensing or regulatory requirements for this course, however completion of the general construction induction training program is required by anyone carrying out construction work on a construction site. Achievement of the unit CPCWHS1001 Prepare to work safely in the construction industry, meets this requirement.

For information visit WorkSafe website:

<https://www.worksafe.vic.gov.au/construction-induction-training-white-card>

A licensed electrician must install any electrical equipment that normally operates at a voltage greater than extra low voltage (ELV). This is legislated and governed by the Electricity Safety Act 1998 (*The Act*).



5. Course rules	Standards 5.8 and 5.9 AQTF 2021 Standards for Accredited Courses
5.1 Course structure	<p>To achieve the award of XXXXXVIC Course in Working Safely on Rooftop Renewable Energy Systems the learner must successfully complete a total of five (5) core units listed below.</p> <p>Where the full course is not completed, a VET Statement of Attainment will be issued for each unit successfully completed.</p>

Unit of competency code	Unit of competency title	Field of Education code (six-digit)	Pre-requisite	Nominal hours
Core units				
VU23631	Work safely on roofs with renewable energy systems	040301	Nil	12
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry	061301	Nil	20
CPCCCM2012	Work safely at heights	061301	CPCCWHS2001	8
CPCWHS1001	Prepare to work safely in the construction industry	061301	Nil	6
HLTAID011	Provide First Aid	069907	Nil	18
Total nominal hours				64

Standard 5.11 AQTF 2021 Standards for Accredited Courses	
5.2 Entry requirements	<p>There are no entry requirements for the 22657VIC Course in Working Safely on Rooftop Renewable Energy Systems.</p> <p>Learners are best equipped to achieve the outcomes of the Course in Working Safely on Rooftop Renewable Energy Systems, if they have minimum language, literacy and numeracy skills that are equivalent to level 3 of the Australian Core Skills Framework (ACSF). ACSF detail may be accessed from here.</p> <p>Learners with language, literacy and numeracy skills at lower levels than those suggested may require additional support to successfully undertake the course.</p>



6. Assessment**Standard 5.12 and 5.14 AQTF 2021 Standards for Accredited Courses****6.1 Assessment strategy**

All assessment, including Recognition of Prior Learning (RPL), must be compliant with the requirements of:

- Standard 1 of the AQTF: Essential Conditions and Standards for Initial/Continuing Registration and Guidelines 4.1 and 4.2 of the VRQA Guidelines for VET Providers,

or

- the Standards for Registered Training Organisations 2015 (SRTOs),

or

- the relevant standards and Guidelines for RTOs at the time of assessment.

The nature of work undertaken in the construction industry is hands-on and practical and therefore, the assessment strategies should reflect this. It is recommended that assessment be a holistic process that integrates a number of units in practical tasks or projects. Assessment strategies should reflect a range of variables, the underpinning skills and knowledge and the assessment requirements specified in each unit. Assessment strategies should be designed to:

- cover a range of skills and knowledge required to demonstrate the intended course outcomes
- be appropriate to the skills, knowledge, methods of delivery and needs/characteristics of learners
- assist assessors to interpret evidence consistently
- recognise prior learning
- be equitable to all groups of learners
- be valid, reliable, flexible and fair
- inform learners of the context and purpose of the assessment and the assessment process
- provide feedback to learners about the outcomes of the assessment process and guidance given for future options
- allow reasonable time to complete a task which specifically reflects the industry context in which the task takes place.

Assessment strategies for the imported units from training packages should be consistent with the Assessment Requirements for the relevant training packages.

Where not mandated in the units of competency, a range of appropriate assessment methods may be used to determine competency.

The following methods are appropriate for the units of competency in the course.

- written and/or oral questioning to assess required knowledge



	<ul style="list-style-type: none"> • direct observation • simulated activities • problem solving activities.
<p>6.2 Assessor competencies</p>	<p>Assessment must be undertaken by a person or persons in accordance with:</p> <ul style="list-style-type: none"> • Standard 1.4 of the AQTF: Essential Conditions and Standards for Initial/Continuing Registration and Guidelines 3 of the VRQA Guidelines for VET Providers, <p>or</p> <ul style="list-style-type: none"> • the Standards for Registered Training Organisations 2015 (SRTOs), <p>or</p> <ul style="list-style-type: none"> • the relevant standards and Guidelines for RTOs at the time of assessment. <p>Units of competency imported from training packages must reflect the requirements for assessors specified in those training packages.</p>
<p>7. Delivery Standards 5.12, 5.13 and 5.14 AQTF 2021 Standards for Accredited Courses</p>	
<p>7.1 Delivery modes</p>	<p>The course may be delivered either on a full-time or part-time basis using a combination of delivery modes, including:</p> <ul style="list-style-type: none"> • face-to-face, classroom-based delivery • blended (face-to-face/e-learning) delivery. <p>Delivery strategies should recognise the nature of the units and the learning styles of the participants. Some units may address common content, therefore integration may be appropriate.</p> <p>The objective of this course is to develop practical competencies within an industry context. Practical demonstrations in the form of realistic, holistic projects that provide participants with a sense of ‘real-work’ experience are considered most suitable to achieving this aim. Delivery methods of units of competency may involve:</p> <ul style="list-style-type: none"> • practical exercises • group discussion • case study analysis • project based learning. <p>Delivery of units of competency imported from training packages should be contextualised to the rooftop solar industry environment, whilst ensuring that the delivery guidelines are adhered to.</p>
<p>7.2 Resources</p>	<p>Successful delivery of this course requires access to;</p> <ul style="list-style-type: none"> • an appropriate workplace or an environment that reproduces normal work conditions



- solar PV panel/water collectors and associated equipment.

For this to occur, providers and industry enterprises may form partnerships to deliver realistic and authentic training and assessment.

The resources that should be available for this course relate to normal work practice using procedures, information and resources typical of a workplace. Participants must have access to:

- WHS/OHS policy and work procedures and instructions
- personal protective equipment
- realistic roof structures clad with tiles, slate and metal sheeting
- building tools and safety equipment
- access to solar panels or water collectors
- relevant installation materials and equipment
- fall and perimeter protection barriers where required to be fitted
- relevant manufacturers' specifications and/or manuals.

Training must be undertaken by a person or persons in accordance with:

- Standard 1.4 of the AQTF: Essential Conditions and Standards for Initial/Continuing Registration and Guideline 3 of the VRQA Guidelines for VET Providers,

OR

- the Standards for Registered Training Organisations 2015 (SRTOs),

OR

- the relevant standards and Guidelines for RTOs at the time of assessment.

The units of competency imported from training packages must reflect the requirements for resources/trainers specified in those training packages.

8. Pathways and articulation

Standard 5.10 AQTF 2021 Standards for Accredited Courses

Graduates may choose to undertake further study to recognise or extend their skill base related to health and safety when performing rooftop solar activities within the construction sector. This includes, but is not limited to, a range of:

- renewable energy skill sets within the UEE Electrotechnology Training Package (electrical licensing applies)
- AQF level 3 trade qualifications within the CPC Construction Plumbing and Services, and Electrotechnology Training Packages.

The course includes units from the CPC Construction Plumbing and Services and HLT Health Training Packages. Completion of those units provide credit transfers into any qualifications or courses containing those units.



There are no formal articulation arrangements in place for the Course in Working Safely on Rooftop Renewable Energy Systems with higher education courses at the time of accreditation.

9. Ongoing monitoring and evaluation

Standard 5.15 AQTF 2021 Standards for Accredited Courses

The CMM – Building Industries is responsible for the ongoing monitoring and evaluation of the Course in Working Safely on Rooftop Renewable Energy Systems.

Formal course evaluations will be undertaken halfway through the accreditation period and will be based on student and teacher evaluation surveys and industry stakeholder surveys/consultations.

The VRQA will be notified of any changes to the course.



Section C – Units of competency

The list of the units of competency imported from Training Packages include:

- CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry
- CPCCCM2012 Work safely at heights
- CPCWHS1001 Prepare to work safely in the construction industry
- HLTAID011 Provide First Aid.

Units of competency developed for the course, which comply with the [AQTF 2021 Standards for Accredited Courses - Unit of Competency Template](#) and detailed in this section include:

- VU23631 Work safely on roofs with renewable energy systems.
-

Unit code	VU23631		
Unit title	Work safely on roofs with renewable energy systems		
Application	<p>This unit describes the performance outcomes, skills and knowledge required to work safely on rooftops with renewable energy systems. It requires the ability to plan and prepare for rooftop work activities, evaluate work area requirements, access rooftop work area, perform and complete renewable energy rooftop work.</p> <p>The work context relates to renewable energy systems that are fully or partially located on a rooftop. Renewable energy system activities relate to the installation, fixing and de-installation of solar PV panels, batteries and heated water systems (HWS), and the maintenance of solar PV panels. This work applies to small scale solar photovoltaic (PV) systems associated with residential and commercial premises.</p> <p>The unit applies to solar PV and battery installers, recyclers and inspectors, licensed electricians, licensed and registered plumbers, electrical and plumbing apprentices, and trade assistants and practitioners responsible for the maintenance of solar PV panels.</p> <p>This unit does not provide technical training regarding renewable energy work activities, rather it focuses on safety requirements when preparing or undertaking rooftop renewable energy activities. It does not include technical requirements regarding connection to an electrical network or battery storage system.</p> <p>References to renewable energy systems within this unit only relate to solar and heat pump heated water systems (HWS).</p> <p>No occupational licensing, legislative or certification requirements apply to this unit at the time of publication.</p>		
Pre-requisite Unit(s)	N/A		
Competency Field	N/A		
Unit Sector	N/A		
Element	Performance Criteria		
Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the assessment requirements.		
1	Plan and prepare for rooftop work activities	1.1	Confirm relevant Occupational Health and Safety (OHS)/Workplace Health and Safety (WHS) and environmental protection requirements are identified, recorded and implemented prior to the commencement of work
		1.2	Assist with the development of relevant safe work method statements (SWMS) in accordance with



			organisational and OHS/WHS regulatory requirements
		1.3	Confirm scope of work, site conditions, materials, tools and equipment required for work activities
		1.4	Read, interpret and confirm requirements for product application is in accordance with manufacturers' specifications and guidelines
		1.5	Identify and confirm worksite and general electrical hazards and associated risks for working at heights, with heat pumps and around batteries
		1.6	Identify options for guard rail installation as a means of perimeter fall protection where appropriate, following fall hierarchy of control measures
		1.7	Identify and confirm hazards and associated risks for manual handling when working at heights
		1.8	Identify control measures for manual handling when working at heights
		1.9	Confirm relevant personal protective equipment (PPE) and clothing are applied in accordance with SWMS and OHS/WHS requirements
2	Evaluate work area requirements	2.1	Confirm isolation of energy sources around roof spaces prior to work commencement
		2.2	Confirm work area access and entry of rooftop work areas is suitable and safe for work activities
		2.3	Inspect worksite layout and work environment, including relevant weather conditions, equipment requirements and compliance with SWMS
		2.4	Identify and report presence of asbestos and silica material in and around work area, in accordance with organisational, OHS/WHS and regulatory requirements
		2.5	Assess roof incline and roof structure integrity to ensure safe working conditions and compliance with SWMS, OHS/WHS requirements and organisational procedures



		2.6	Confirm all perimeter fall protection, travel restraint or work positioning system anchor points and lines are installed in accordance with the SWMS
3	Access rooftop work area	3.1	Check that building and safety equipment for work to be undertaken is in accordance with workplace approved procedures
		3.2	Confirm that personal fall protection equipment, where required, is used in accordance with workplace approved procedures
		3.3	Check suitability of fall protection equipment prior to working at heights, including appropriate PPE
		3.4	Check materials, tools and equipment are placed in a safe location to minimise risk of damage to product and injury to others
		3.5	Use relevant manual handling method for moving tools, equipment and materials to work area in accordance with organisational safety and renewable energy work requirements
4	Perform renewable energy rooftop work	4.1	Personal fall protection equipment, where required, is continuously maintained and adjusted with movement to ensure protection is not compromised or diminished
		4.2	Use materials, tools and equipment at the worksite in accordance with organisational procedures and manufacturers' specifications and guidelines
		4.3	Re check compliance concerning isolation of energy sources according to WHS/OHS workplace procedures



5	Complete renewable energy work	5.1	Confirm and document completion of work activities according to organisational procedures
		5.2	Clean work area and dispose of, reuse or recycle materials according to legislation, regulations and codes of practice
		5.3	Clean, check and store relevant tools and equipment according to manufacturer recommendations and organisational procedures
		5.4	Finalise relevant reporting according to regulatory requirements



Range of Conditions

Renewable energy products relate to solar photovoltaic (PV) panels, battery storage systems and heat pump heated water systems (HWS).

Weather conditions may vary and affect work safety and work performance. Weather conditions may include time of installation effecting light availability, condensation / dew; wet, cold, icy, windy or hot days; sun light UV.

Foundation Skills

Foundation Skills describe the language, literacy, numeracy and employability skills that are essential to performance but not explicit in the performance criteria

Skill	Description
Oral communication skills to:	<ul style="list-style-type: none"> confirm workplace safety compliances
Numeracy skills to:	<ul style="list-style-type: none"> estimate adjustments required for safety equipment
Digital literacy skills to:	<ul style="list-style-type: none"> record relevant workplace documentation

Unit Mapping Information

Code and Title Current Version	Code and Title Previous Version	Comments
VU23631 Work safely on roofs with renewable energy systems	VU22744 Work safely in the solar industry	Equivalent

Assessment Requirements

Title

Assessment Requirements for VU23631 Work safely on roofs with renewable energy systems

Performance Evidence

There must be evidence the learner has completed the tasks outlined in the elements, performance criteria and foundation skills of this unit including evidence of the ability to:

- plan, prepare and perform rooftop renewable energy work activities within the context of own work role on two (2) occasions:
 - one (1) must involve working:
 - on a tiled roof
 - with a pitch
 - one (1) must involve working:
 - on a metal cladded roof
 - with a pitch.

Knowledge Evidence

The learner must be able to demonstrate essential knowledge required to effectively do the task outlined in elements, performance criteria and foundation skills of this unit, manage the task and manage contingencies in the context of the work role. This includes knowledge of:

- common renewable energy industry terminology related to renewable energy systems and rooftop work activities
- relevant standards and manufacturer's specifications and guidelines associated with renewable energy systems and products
- relevant legislative environmental protection and occupational health and safety (OHS) / work health and safety (WHS) requirements and practices
- renewable energy industry regulations
- organisational procedures associated with workplace safety
- basic assembly and installation principles and structures of solar components including solar PV panels and mounting rails
- application of building and fixing materials and their effects on construction performance
- sustainable building practices and waste management processes
- sustainable renewable energy product re-use and recovery approaches
- manual handling procedures for renewable energy product stewardship, tools and equipment
- types and limitations of manual handling equipment
- safe practices for working in different weather conditions
- composition of safe work method statements (SWMS) including site specific set up, roof access and egress, installation of fall prevention devices, work positioning systems, and emergency plan
- safety hierarchy of controls for hazard and risk management
- types and uses of personal fall protection including harnesses and lanyards
- types of work area fall protection including perimeter protection equipment including guard rails
- common hazards and risks associated with:
 - working at heights including:



- access (both people and equipment)
- falls from heights
- falling objects
- slippery glazed tiles or tiles with algae or moss deposits
- roof pitch / slope
- damaged roofing / fragile roofs / brittle roofing / skylights
- weather conditions including:
 - time of installation effecting light availability, condensation / dew
 - wet, cold, icy, windy or hot days
 - sun light UV and sun burn
- manual tasks including:
 - handling / moving solar (PV) panels
 - handling solar (PV) panel mounting kits
 - handling product related to solar HWS
 - handling tools and equipment
- asbestos including:
 - inhalation of asbestos fibers
 - fragile / brittle roofing
- silica dust
- electrical including:
 - discharge from uninstalled panels
 - electrical wiring, electrical fittings and electrical equipment
 - contact with overhead power lines or electrical cables located in ceiling spaces
- risks associated with ceiling voids including:
 - heat stress
 - electric shock
 - electrocution
 - falling through the ceiling
 - inhalation of roof insulation fibers
- common locations of asbestos containing materials, including:
 - roof and wall sheeting, ridges, barge capping, gutters, eaves and downpipes
 - electrical backing boards and some fuses and conduits in switchboards
 - ceiling spaces (insulation, pipe lagging, delamination of roof)
- relevant sun safety personal protective equipment including hats, sun screen, long sleeved shirt, sunglasses)
- lockout and energisation procedures.

Assessment Conditions

Assessment must be in the form of:

- direct observation of the candidate performing work activities in a real workplace setting or simulated environment
- oral and written questioning.

Both practical skills and knowledge must be assessed. Skills must be demonstrated in a renewable energy industry workplace or simulated environment that complies with standard and authorised work practices.



safety requirements and environmental constraints. This includes access to relevant:

- regulations, codes of practice and notices to market
- renewable energy work tools, equipment and materials
- workplace procedures
- renewable energy product and manufacturing specifications, codes, standards, manuals and reference materials
- a rooftop with a tiled surface
- a rooftop with a metal surface
- battery energy storage product at ground level.

No specialist vocational competency requirements for assessors apply to this unit.