Solar PV Installation for Roofers Short Course

Course Specification

Introduction

NOCN is a market-leading awarding organisation that has been providing qualifications, assured short courses, various courses for a wide range of centres, including FE colleges and training providers, for 30 years both in the UK and internationally.

We work with centres to deliver a high quality and flexible service for learners to underpin our passionate belief in the power of education and its impact on communities and individuals.

We offer all the advantages of being with a national awarding organisation with a diverse portfolio of qualifications, alongside providing a personalised, bespoke, service to our centres and learners.

As an accredited Leader in Diversity, we are proud of our reputation as a provider of fully accessible, trusted, and flexible qualifications.

About NOCN Group

NOCN is part of NOCN Group, a progressive educational charity whose core aims are to help learners reach their potential and organisations thrive. The group includes business units specialising in regulated UK and international qualifications, end point assessment, endorsed programmes and assured short courses, Smart job cards, assessment services, consultancy, and research.

NOCN Group shares a joint purpose to offer learners, training providers, employers, and FE Colleges a fully integrated range of learning and skills development products and services.

Information about all our courses and qualifications is available from our website: www.nocn.org.uk/

Course Specification

NOCN Group have produced this short course to assist in the drive towards clean power. This short course is designed to equip roofers with the skills and knowledge to install solar panels to the point an electrician can finish the installation. These skills will allow for a higher rate of installation, working towards the government's net zero strategy. This course empowers learners to instil a sustainable mindset, preparing them to contribute responsibly to society and the environment.

The purpose of this course is to further develop on the knowledge and skills roofers already have. The processes involved in installing are well within the skillset of a roofer. This course explores how solar panels work, including the makeup of a panel, how much electricity they can produce, as well as the different types of installations and the practical skills involved with installation. Practical skills include how to fit both in-roof panels, and retrofit to existing roofs, as well as the electrical connections, variations and reasons for variations between connections.

This course is intended for roofing apprentices, and qualified roofers either working independently, or for a larger company, who seek to enhance their offering.

Course Content / Objectives

Section 1: Solar Power

- Understand the benefits of solar power
- Understand how solar panels work, and the makeup of a typical solar panel
- Understand the energy production and usage of power in the context of a domestic installation.
- Understand the efficiency of a solar panel and why this can vary.

Section 2: Standards and Responsibilities

- Understand the responsibilities of a roofer installing solar panels.
- Know the relevant industry standards and how to work to the standards.
- Know how to work safely with solar panels, including safe electrical working, and lifting.

Section 3: Installation

- Know the design considerations of solar installations, including measuring and marking up, and taking into account wind and fire safety considerations.
- Know and demonstrate the installation of in-roof panels and retrofit panels.
- Understand how to safely isolate panels, and how to connect panels in series, parallel or a combination, and the role of an inverter in an installation.
- Understand how to ensure the roof-side of an installation is safe for an electrician to complete.

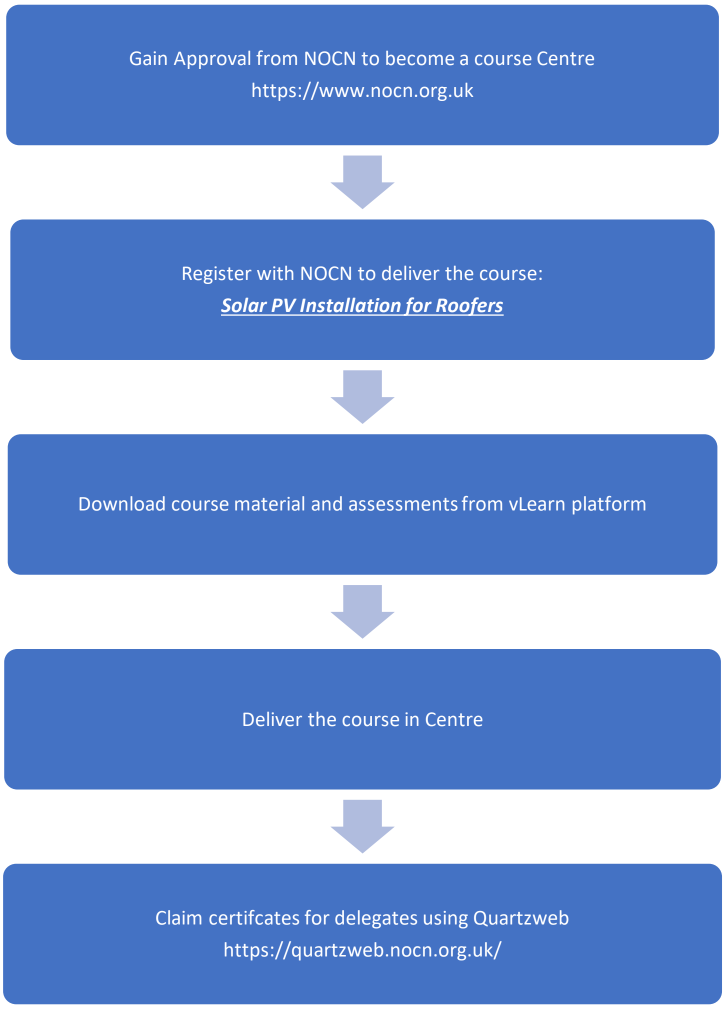
Section 4: Other considerations

- Understand the potential issues which may arise when installing solar panels.
- Understand other considerations such as bird/pest proofing and the necessity.
- Know the basics of solar panel maintenance.

Course Approval

Prior to advertising or delivering this Assured Course, organisations must first gain Centre Approval from NOCN as well as gaining approval for each individual Assured Course. For further information regarding gaining approval, please contact the NOCN Onboarding Team at onboarding@nocn.org.uk.

Approval, Readiness, Deliver and Certification Process



Trainer Requirements

This course can either be delivered in a classroom and workshop by a trainer. Trainers on this course should be qualified roofers with experience in fitting solar panels. For the electrical elements of the course, it may be beneficial to bring in a course tutor for electricians for the most up-to-date and accurate teaching.

Resource and Equipment Requirements

In order to deliver the course, the Centre must have access to and make use of the following resources and equipment:

Requirement	Detail
Training Environment	• **Classroom and workshop**
Tools/Equipment	• **Course Presentation** • **Projector / Laptop** • **Workbooks** • **Learner devices such as smart phones, or centre laptops for research tasks.** • **Solar panel brackets and MC4 connectors from a range of suppliers.** • **Tools appropriate for fitting solar panels, including insulated tools.** • **Solar panels and appropriate accessories for the installation assessment.**
Personal Protective Equipment (minimum)	• **Appropriate PPE for installation of solar panels in a simulated environment, such as head protection, gloves, fall protection, etc.**
Delivery	• **PowerPoint presentation** • **Workbook**
Testing	• **Practical observation with questioning, marked pass or fail.**

Course Delivery

This course is designed to be delivered in a classroom and workshop setting. It is not advised to deliver the entire course in the classroom only using the PowerPoint presentation. Learners must gain the experience installing panels, ideally in a simulated environment where the risks are lower. This course typically takes 21 hours to deliver. Delivery is flexible, it can be delivered as a 3 day course either on subsequent days or over 3 weeks, 7 x 3hr evening sessions, or any other arrangement which allows for effective delivery of the course. Time in the workshop should be planned out by the tutor when appropriate during the delivery of the course. Guidance is not given throughout the PowerPoint on when to spend time in the workshop.

The documents to support delivery of this course are:

- Solar PV Installation for Roofers (PowerPoint)
- Solar PV Installation for Roofers Tutor Guide (Word)
- Solar PV Installation for Roofers Workbook (PDF)

The workbook for learners is designed to be printed out and used throughout the delivery of the course. Tasks within the PowerPoint match up with the tasks within the workbook. Learners will be able to use the workbook as a reference resource. Guidance on the workbook tasks and correct answers are given within the tutor guide.

Assessment

The assessment for this course is to be delivered and assessed by the centre in line with the assessment guidance given within the assessment record. The assessment is a practical observation followed by a question and answer session.

During the assessment, learners must install an array of two solar panels on a roof in a simulated environment. The learners must wire the panels correctly in either a series or parallel arrangement. Panels must be correctly and securely fixed to the roof using the correct fittings. The installation can be either an in-roof or retrofit installation.

The installation is to be followed by a question and answer session, covering finding any information required for installation, responding to resident enquiries about installations, and the effective handing over of installations to electricians. Questions asked must be recorded in the assessment record.

The assessment is graded pass or fail. To pass the assessment, learners must meet every pass criteria. Criteria includes: demonstrating safe working, including safe handling of resources, safe lifting procedures, and safe electrical working, demonstrating completion of work to a commercial standard, and installing a system to the given specification by correctly interpreting drawings and instructions. The full list of pass criteria can be found in the assessment record.

If a learner fails, they may re-take the assessment, but must be given a different design arrangement to work to and different questions during the question and answer session to allow for a fair assessment.

An assessment record for each learner and attempt must be completed for the assessment.

Quality Assurance

The Quality Assurance requirements of Assured Course delivery can be found within the Assured Course Quality Manual, available on the NOCN website.

Progression

NOCN a delivering a suite of specific integrating courses to give real world examples of how to embed into specific sectors such as engineering, construction. We recommend that learners now take their sector based embedding course. If your sector is not on the list of approved courses, then please let us know and we can develop the sector needed.

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