

Renewable Energy Sources for Buildings

Schueco is a leading designer and manufacturer of renewable energy systems in the form of photovoltaic modules (Solar PV) and solar thermal (hot water generation) collectors. Schueco renewable energy systems can be fully integrated with the building with the building envelope. They are fully compatible with Schueco façade and fenestration systems and are available in a choice of designs, meeting the highest standards.

Introduction

Schueco offers expert solutions for all types of building construction and façade envelopes. Schueco's state of the art products are distinguished by their modern appearance and fulfil the highest standards of thermal and energy efficiency. By choosing Schueco, all partners will benefit from its wide ranging building envelope expertise.

SchücoSol Solar Thermal Collectors

Applications - *SchücoSol* collectors can be used in all types of building applications, whether as stand-alone systems, mounted in or on roofs, walls, canopies or installed as whole roof or façades.

Description - Solar fluid is circulated through *SchücoSol* thermal collectors via the purpose-designed meander or serpentine principal, picking up radiated energy from the sun. This energy is then collected for use. Each panel is protected with low iron solar glass encased in slender aluminium frames and contains a high level of thermal insulation. Panels have a sun selective absorber coating which maximizes energy collection and minimizes heat losses.

Dimensions - *SchücoSol* collectors are available in Compact Line and Premium sizes.

Appearance - The collector surface is coloured dark blue. The aluminium frames can be finished in a choice of anodised finishes or RAL colours.

Performance

Weather - *SchücoSol* collectors are constructed to protect against the weather. The solar fluid is frost resistant down to -24°C.

Liquids - The system uses a harmless heat carrying solar fluid.

Biological - The panel helps protect against the build-up of various algae and moss growths on the main collector surface.

Heat - A typical *SchücoSol* collector will give an output of 2kW.

Durability - Panels should be operating for 20 years plus.

Photovoltaic Modules

Applications - Photovoltaic modules (arrays) can be used in all types of building application, whether as stand-alone arrays mounted on roofs, walls or canopies, or installed as whole roof, skylight or aluminium façade panels.

Description - Each standard module contains high performance, polycrystalline or monocrystalline solar cells that convert the sun's light to DC electricity. This is then converted to AC electricity via inverters and fed into the building's electricity supply or, if in surplus, sold to the electricity supplier. PV modules incorporate a lightweight aluminium frame to aid installation and protect the module edges and add stability.

Schueco thin-film systems provide the right solution for all project requirements. Small installations on family homes can be designed just as easily as large free-standing projects or large installations on industrial roofs. Framed and unframed modules in various sizes can be individually combined with inverters and the various installation options.

Innovative mounting systems - An intelligent mounting system has been developed for Schueco thin-film laminates which greatly simplifies and accelerates installation. Due to the modular construction, the various installation types can be achieved using a minimum of components.

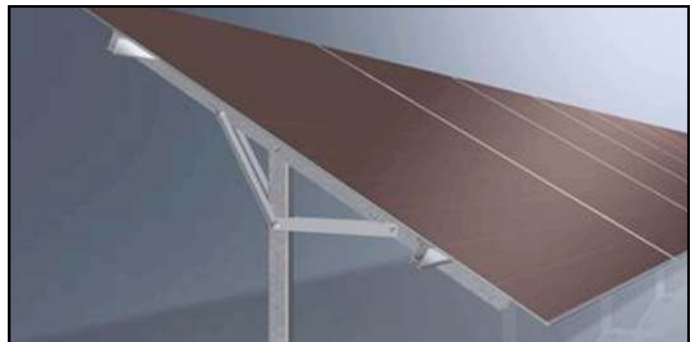
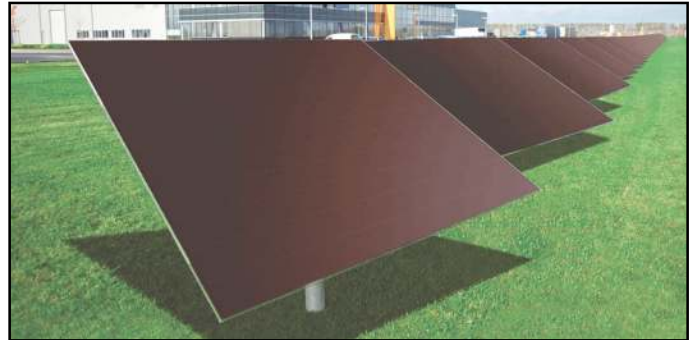
Integration in the building envelope - Schueco is the pioneer in integrating photovoltaics in the building envelope. Framed and, above all, frameless PV modules are fabricated by Schueco according to the specifications of the architect or client and perfectly integrated in the building concept.

Dimensions - PV standard modules are supplied in a number of sizes. Bespoke Thin Film provide architecturally designed opportunities as this is manufactured to size and specification of each individual project.

Performance

Weather - All panels are weather resistant when installed with Schueco support systems.

Biological - PV panels resist algae and moss growth when installed at optimum angles of inclination, but can be easily cleaned if required.



Pollution - Modules and module performance are unaffected by general atmospheric pollution.

Light - PV modules are UV resistant.

Electrical - Electrical output of a Schueco PV module varies from 190-350 wp for standard PV modules. Output of bespoke Thin Film is dependent on design and cell density.

Durability - Performance output is expected to be for at least 25 years.

Operation & Maintenance

In general, PV and solar thermal systems are self-monitoring and operate automatically.

Maintenance - General maintenance regimes are on a project basis to integrate with other cyclic maintenance schedules operating within the building.

Cleaning - *SchücoSol* collectors can be cleaned in the same way as standard building glazing.

Economics

Guarantees - All products have product specific performance and quality guarantees.

Supply & Services

Schueco products are supplied via a network of fully trained installing partners. Technical support is available through the Schueco Renewables Division based in Milton Keynes or through one of Schueco's highly trained Architectural Project Managers.