

Helial[®] Intégration

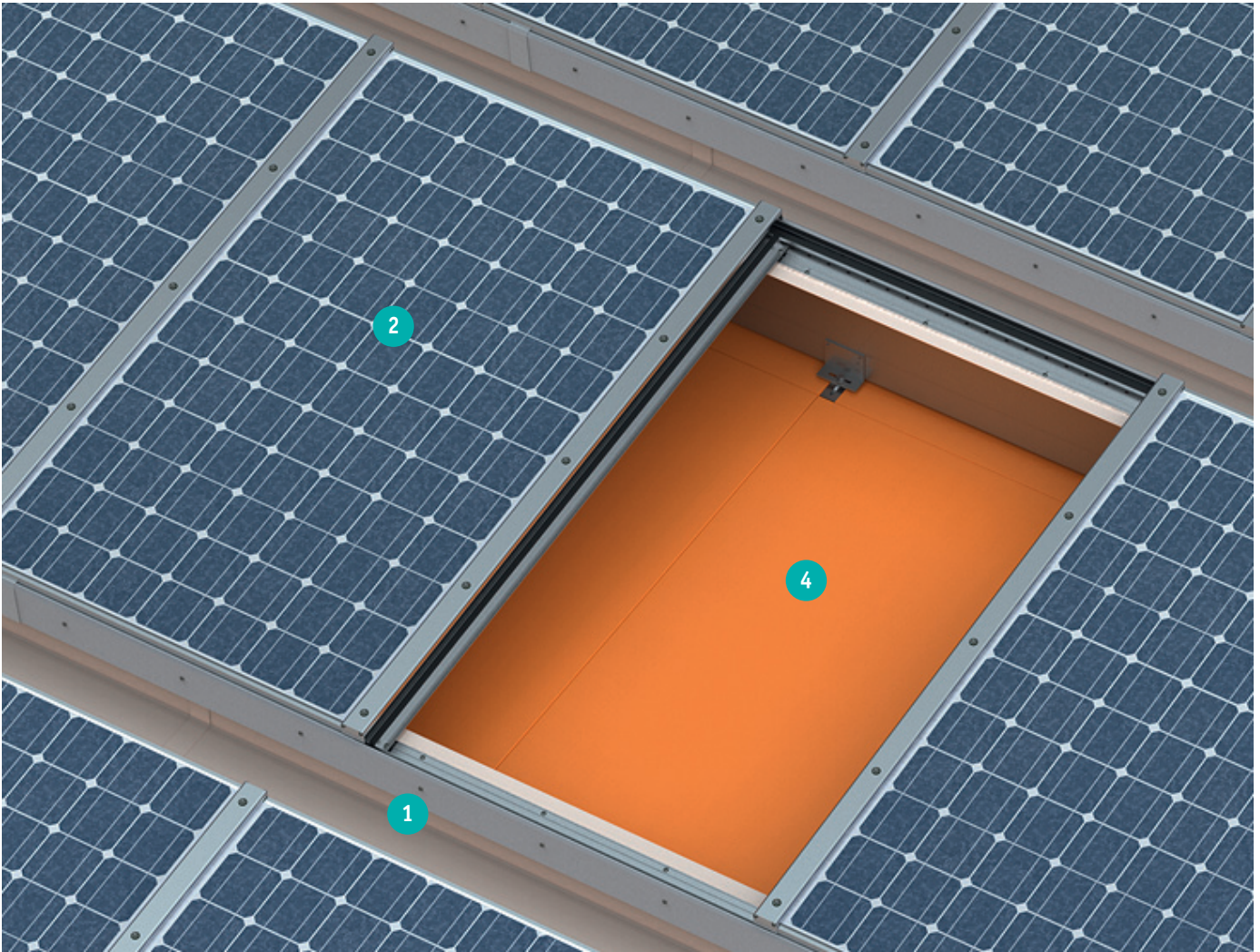
Roofing system incorporating photovoltaic modules



Lightweight aluminium structure suitable for all sub-bases (concrete, steel tray, timber, etc.)

- + Rigid Crystalline photovoltaic modules
- + High-performance thermal insulation
- + Eligible in France for enhanced feed-in tariffs
- = Helial Intégration, a sustainable roof





Description of the system

Helial integration is a complete roof **system incorporating** photovoltaic modules.

The system comprises insulation covered with an aluminium structure and rigid photovoltaic modules. The assembly of the aluminium structure and the photovoltaic modules is **completely waterproof**.

The quality of the materials selected gives the system a **lifespan** much longer than that of traditional roof coverings.

The high-performance insulation ($R > 5 \text{ m}^2 \text{ K} / \text{W}$) enables the building to comply with French BBC (low consumption building) or positive energy standards.

The aluminium **structure is designed to be both** lightweight and able to withstand strong winds (winds up to category 5).

The use of crystalline silicon photovoltaic modules provides maximum efficiency, even over the long term.

Natural ventilation is provided under each panel, thus improving efficiency.

Helial Intégration meets the French criteria for a built-in system, making it eligible for the best feed-in tariffs.

Helial Intégration thus provides the benefit of a sustainable roof and provides a return on its capital cost by using solar energy.

Field of application

Helial Intégration is suitable for all types of sub-bases complying with concrete, including zero slope, steel deck, timber and reconstruction of flat or pitched roof coverings, in both new construction and refurbishment.

The light weight of the system makes it suitable for concrete, lightweight steel tray or timber sub-bases

Elements of the system

Helial Intégration is a system comprising an aluminium structure provided by dani alu (1) and materials selected by them for their technical features (2, 3, and 4).

1 The aluminium structure (provided by dani alu).

2 The photovoltaic modules:

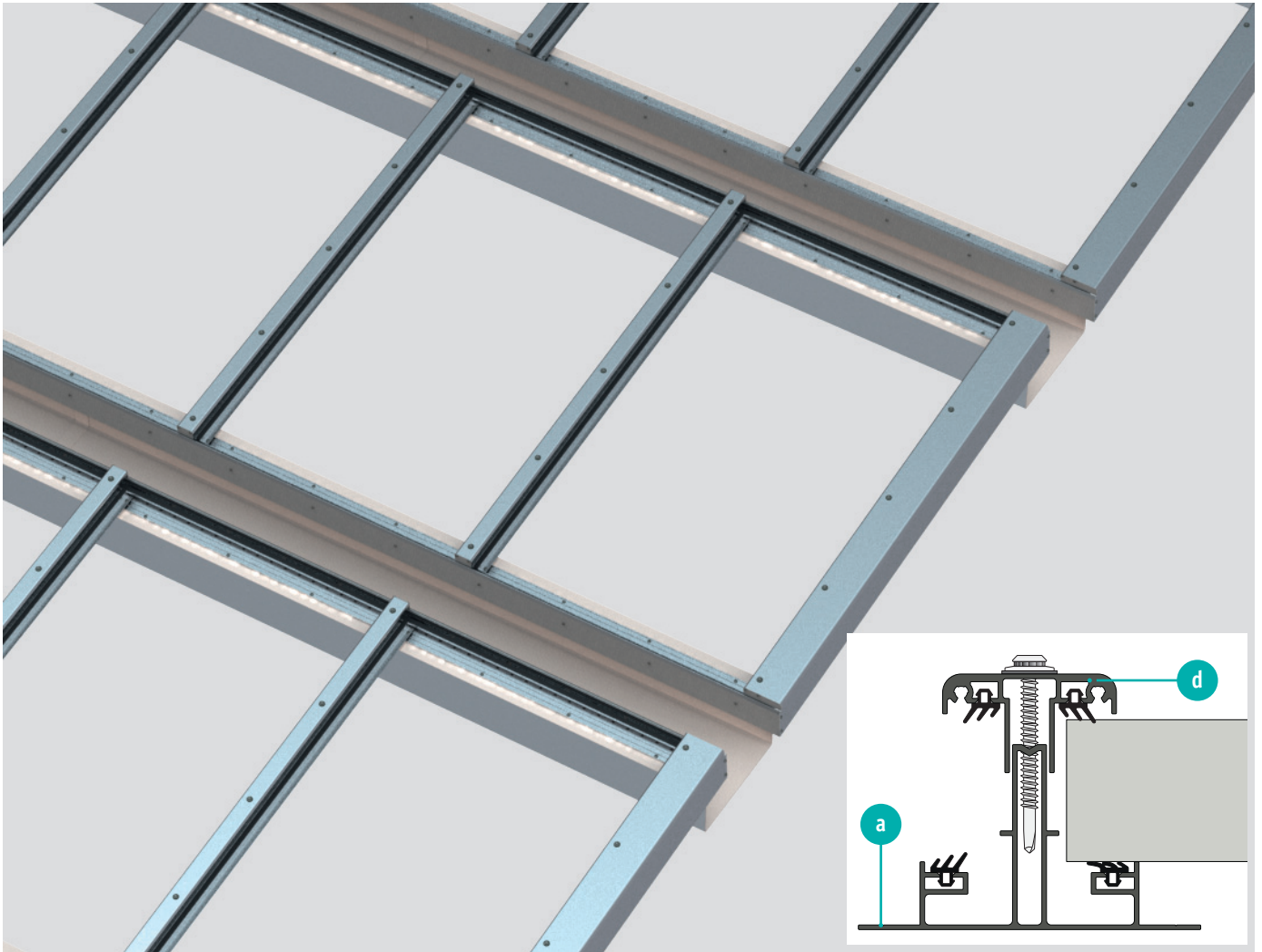
The photovoltaic panels are of the rigid crystalline, pre-framed type. They must be checked for compatibility by dani alu.

3 Peripheral sealing and vapour barrier:

The peripheral sealing and vapour barrier are type SARNAFIL TG66F (AT No. 5/04-1786).

4 Insulation: The insulation is type KNAUF INSULATION POLYFOAM LJ (AT No. 5/04-1780).

In the case of a steel tray sub-base and/or a Public Building, the POLYFOAM insulation is supplemented by a rock wool panel to form a fire barrier (KNAUF INSULATION TERMOTOIT AT No. 5/09-2066).



The aluminium structure

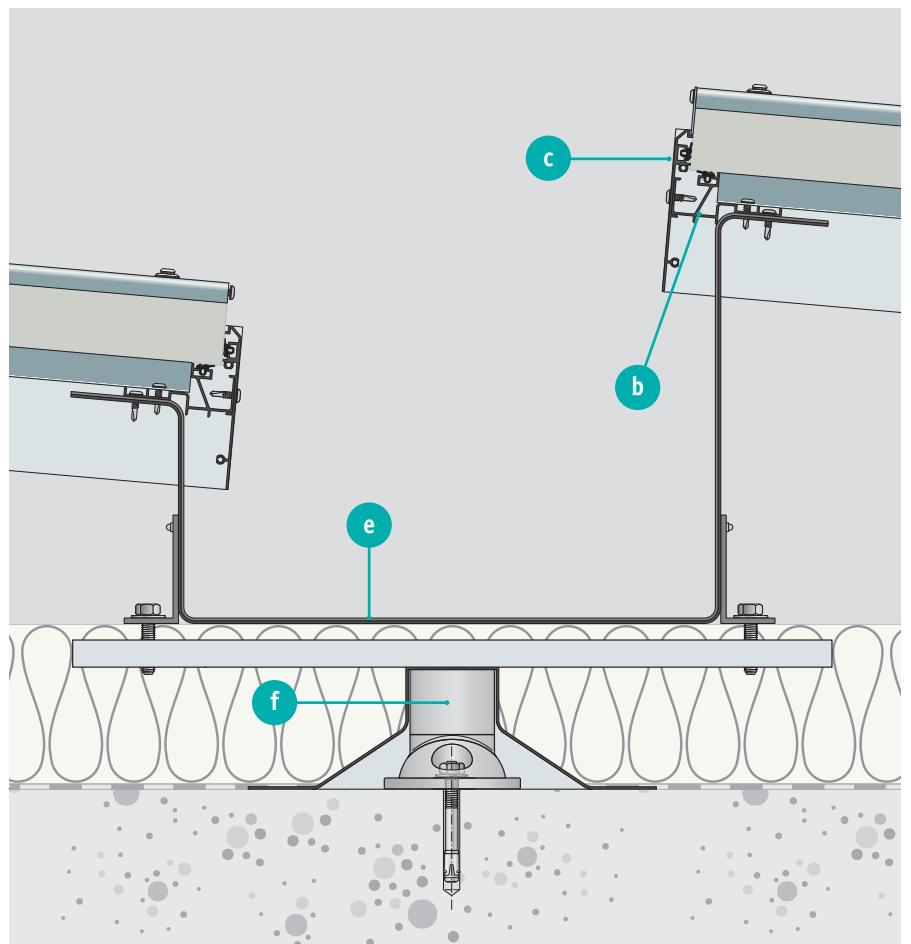
The aluminium structure is the central innovating feature of the Helial Intégration system.

It enables rapid installation and a perfect seal.

The gutters between the panels make it easier to walk on the roof during installation and provide access for the lifetime of the system.

The underside of the gutters is coated with a waterproofing membrane (SARNAFIL TG66F AT No. 5/04-1786).

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- a) Rafter
 - b) Cross piece
 - c) Solin
 - d) Clamping bar
 - e) Gutter
 - f) Fixing plate at intervals





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French EDF feed-in tariffs

The feed-in tariffs for the purchase of electricity are governed by the French Order of 4 March 2011.

This Order establishes an enhanced tariff for "built-in" systems, which includes the Helial Intégration roofing system.

Approved installers

Helial Intégration is installed exclusively by dani alu approved contractors.

Each site will require specific quality monitoring.

Warranty

The Helial Intégration system is covered by a ten-year warranty by the approved installer.

For further information:

For further information, preliminary design or cost advice, contact:

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