

## -TILE PHOTOVOLTAIC-



**Terra cotta tile in large, low visual impact of the photovoltaic panel in it.**

This type of tile is mounted as a normal tile, and you get a kind of roof is very stable and, eventually, you can enter the photovoltaic panel, until you reach the maximum extension of the roof.

With this tile, you can easily do routine maintenance, replacement of damaged panels or replacement of panels from one type to another (for example, go from a panel of 8 to a Wp 12 Wp, or in the future to replace them with panels technologically more advanced).

Ultimately it is a type of roof that allows a good modularity, low visual impact, of course it is essential to good design, with a careful study of shadows, with the first installation, the connection cables.

The tile patterns are currently two, one third is under testing.

The model DF2, size 46x39 cm, see the roof after installation of the panel is a model of the tile to fit on the center, very stable, low visual impact, and requires more special pieces.



**For this model requires 7.5 tiles per square meter.**

The model DF3 size 46x43 cm, instead refers to the Portuguese tile, and the panel entered is more visible.



**For this model takes 6.75 tiles per square meter.**

Currently you can insert a panel 4 with 125x125 cells made from 8 Wp Isofoton cells or a panel with 4 cells Sunpower 125x125 with 12 Wp yield.

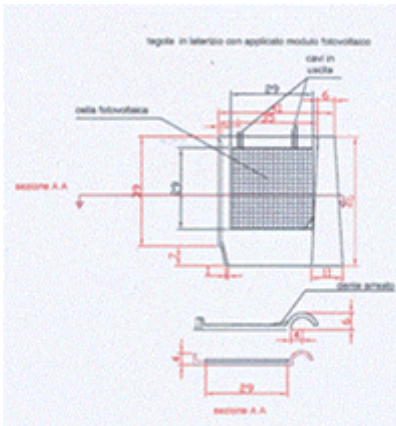
The merit of this type of tile is that it lends itself to support of the panels can be replaced over time with the panels of the same size but with improved performance, without additional supports, change of roof tiles, or distortion of the roof.

Our tiles are manufactured from natural clays of the Po plain, without added sludge or industrial additives, and cooked at a temperature of 980 degrees centigrade.

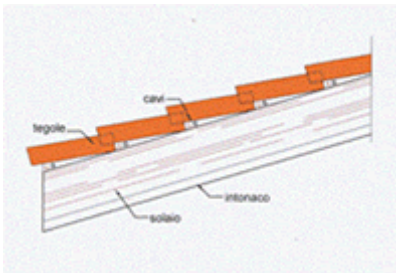
## **HISTORY AND DESCRIPTION**

The idea of tile photovoltaic project was born from the restructuring of the castle of Acquabella in the forest of Vallombrosa in Tuscany when he built the castle roof was built using tiles of size and type can deal winters and winds outside 'ordinary and therefore are now particularly well suited to address the increasingly frequent weather emergencies. The idea now wants to combine tradition and modernity: it uses a tile in that time has shown great stability for his simple yet ingenious system for attaching to one another, visually maintains the tradition of terracotta roofs and now is coupled to a source of clean energy. From this arise two types of tiles, the model DF2 refers to the type and model Alpine DF3 type that resembles Portuguese. This type of tiles are larger than the common market (despite having the same average weight) and stay on the outer face of a photovoltaic panel discrete size, modulating with the other and almost completely invisible, unlike current products on the market. The main feature of the DF1 and DF2 tiles is that they can be used even without the application of photovoltaic panel, the application of which can safely be

postponed to a later time. This system allows rapid maintenance and eventual replacement of the panels with others, characteristics of higher education, which in time will give us the technology, but retaining the same tiles as support. The scope for these tiles is generally valid for all types of roofs, but you must have a care in the evaluation of the shadows, to make a proper wiring of diodes between the strings of tiles connected in series. The panel can contain 4 cells from 2 per Wp cell Isofoton (in photo) 8 Wp total, or 4 cells from 3 per Wp cell Sunpower for a total of 12 Wp.



Particolare design



Section with stratification

### Components panel:

Frame: tile brick type DF2 size L 39 h 46 cm

Frame: tile brick type DF3 with dimensions L 43 h 46 cm

Terminator: the inverter to the proper class

Glass: glass front cover high transmittance 3 mm tempered

Tedlar polyester cover rear chassis incapsulante etilvinilacetato

Anchoring system to cover: typical of the tiles during certification

Specifications photovoltaic module: type DF2

Features for 9 modules connected in series

Dimensions: height 295 mm, width 280 mm 4 mm

Composition: 36 cells from 125 mm X 125 mm

Performance: Typical power 75 w

Minimum power 72 w

Open circuit voltage 21.5 V

Short-circuit current 4.8 A

Max power 17.5

Current at 4.3 A max power

Maximum system voltage of 735 V

Operating temperature -40 / +85

## -PLACEMENT AND CLAMPING-

The PV panels can be installed on roofs residential, industrial, or fixed to the ground. Where the installation is done on the hedges will be greater incentive, especially if the plant is considered to complement architectural total, compared to systems installed on land. E &#39; must be clear that to install 3KW power requires about 25mq coverage and facilities for large or you have enough coverage or will be installed on land. There where you prefer to use other than the roof covers the house, you can create shelters for external use such as cars. The panels must be positioned towards the south slope to be defined locally.



**-SIMPLIFIED DIAGRAM-**

