



Roofinggreen®
INSPIRED BY NATURE

Computation **GUIDE**





INTRODUCTION

This guide contains the necessary information for resellers, architects, designers or construction companies to calculate all the elements necessary for the realization of a modular Roofinggreen synthetic grass flooring.

To choose the most suitable module type for your specific project, consult the Catalogue and Product Data Sheets or Roofinggreen's technical office.

1. CALCULATION OF PANELS

To calculate the quantity of panels necessary to cover a surface, it is necessary to have a floorplan with measures, preferably in .dwg or .pdf format.

For rectangular surfaces it is sufficient to calculate with 50cm per module, rounding off in excess, using the following formula:

$$\text{Panels} = (\text{length} / 50 \text{ cm}) \times (\text{width} / 50 \text{ cm}) \text{ rounded off in excess}$$

Ex. Fig. 1: $(585\text{cm} / 50 \text{ cm}) \times (320\text{cm} / 50\text{cm}) = 11.7 \times 6.4 = 12 \times 7 \text{ panels} = 84 \text{ panels}$

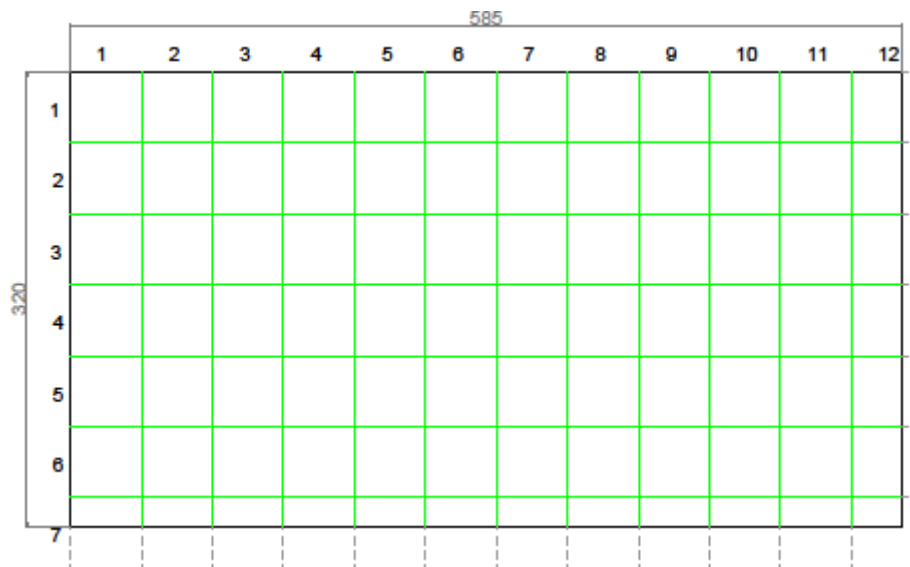


Fig. 1

In case of more complex or out of frame surface areas, it will be necessary to draw on the floorplan a 50x50cm grid to calculate the total number of panels required.

The panels are sold in full boxes; therefore, the total number of panels will be rounded off upwards to arrive at a full box. The number of panels per box depends on the module type.

Ex. LEAF panels:

Project requirement 84 pcs.

One box LEAF = 32 panels

Supply Quantity: 3 boxes = 96 panels

PANEL TYPE	BOX (pcs)	
LEAF	32	
M10 DRAIN	22	
M20 DRAIN	18	
SIDE	20	

2. PERIMETRIC PANELS

The geometry of the panels has the following characteristics: (see fig. 2):

- the single module perimeter measures 53x53 cm, including the dovetail shaped joints
- a module without the perimetric dovetail joints are reduced by 3 cm on each side
- panels that are joint together have an interaxis of 50x50cm

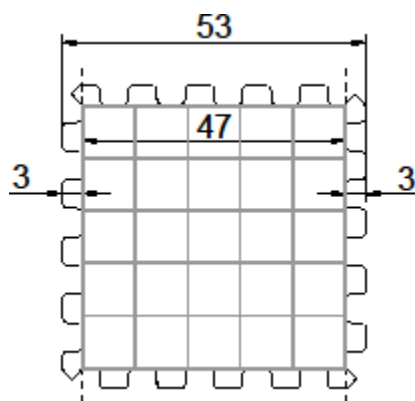


Fig. 2

Therefore, panels that are joint together, with the perimetric panels having cut off their dovetails, will have a length corresponding to the number of panels x 50cm, minus 3cm. As a result, in case of a dimension of exactly a multiple of 50cm, it is preferable to calculate with an additional row of panels.

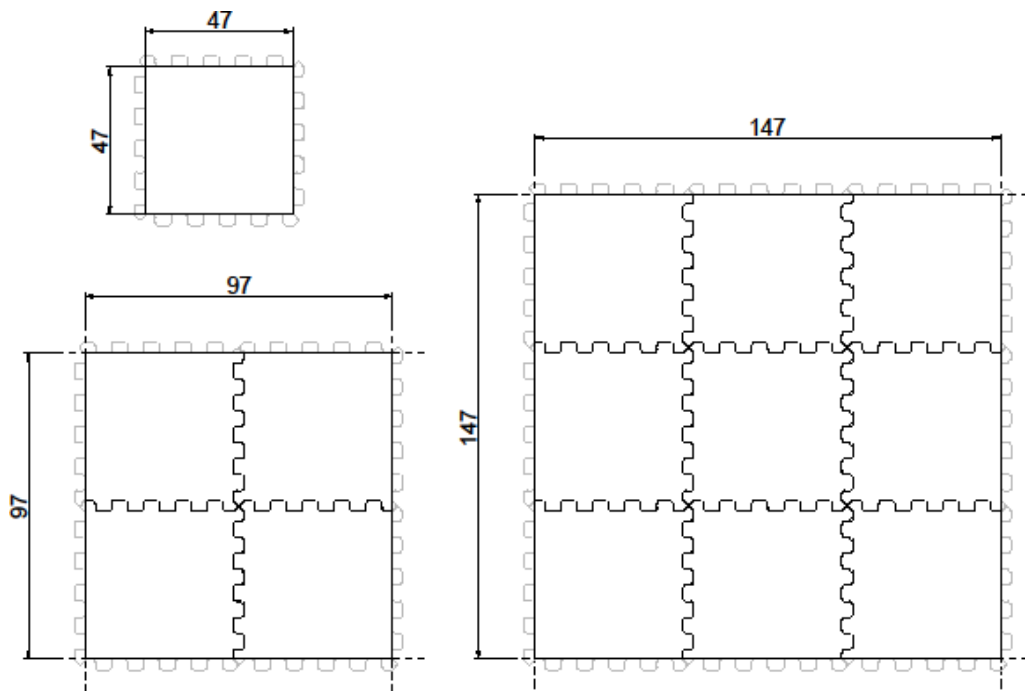


Fig. 3

3. Excess Parts

It is standard practice to have available some extra panels beyond the strictly necessary quantity, to be used of some errors during the module cutting phase or a difference between the real-life measures compared to the floorplan.

Any unused panels in excess may be stored as backup. The quantity of excess parts will vary in function of the size and complexity of the project.

4. REUSAGE OF CUT PANELS

Cut panels may be reused without rotating them, in order to maintain the same grass direction, as shown in ex. 4 and 5. It is recommended to apply this possibility only for relatively small cuts, and when the exact dimension are well defined. In any case it is preferable to always have a number of panels in excess available, in case of errors during cutting on site.

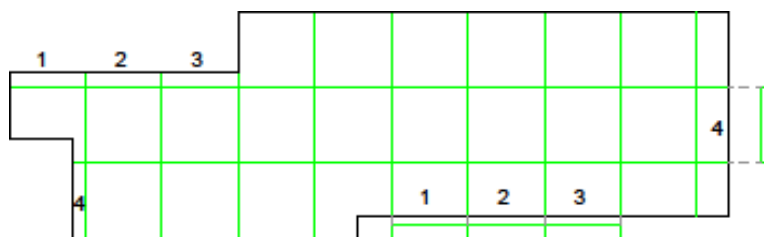


Fig. 4

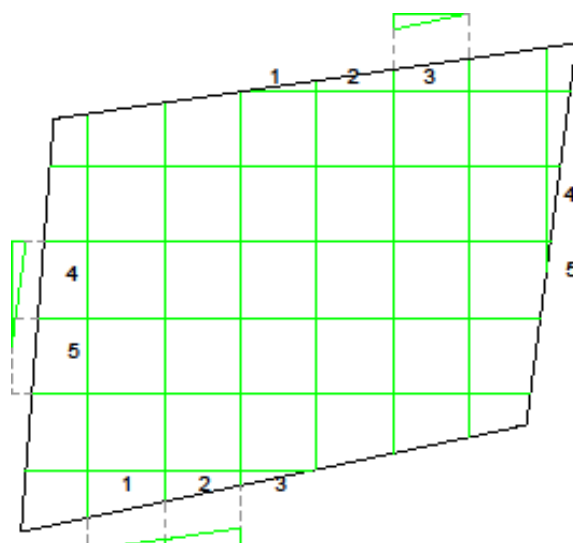


Fig. 5

5. CALCULATION OF GEODRENO

Il materassino geocomposito drenante Geodreno è disponibile in due spessori, ai quali corrispondono diverse quantità minime di vendita:

Geodreno, the structured geotextile role, is available in two different thicknesses, with corresponding min. sales quantities:

Material	Roll Dimension	Roll Surface Area	Sales Multiples
Geodreno 7mm	1m x 30 m	30 m ²	10 m ²
Geodreno 16mm	1m x 25 m	25 m ²	12.5 m ²

Nel caso di superfici regolari, basterà computare 1 metro quadro di Geodreno per 1 metro quadro di superficie. In case of regular surfaces, it is sufficient to calculate with one square meter of Geodreno for every square meter of surface area. For irregular surfaces or out of frame surfaces, calculate an adequate amount of material in excess.



6. CALCULATION OF B – SERIES SUPPORTS

The following elements constitute the B-series support feet:

- B50 and B100 height adjustable supports
- Ground Care pads

For every Roofinggreen module, calculate with five B supports.

nb: only in case when the surface will have a reduced or no weight load to support – including foot traffic – it is possible to reduce the number to four supports per module.

$$\text{B-series supports} = \text{nr. panels} \times 5$$

The support feet are supplied in full boxes.

B-series	PIECES PER BOX
B50	64
B100	36

EX. 84 panels x 5 supports/module = 420 support feet

Ex. B50: = 420 pcs / (64 pcs/box) = 6.56 boxes = 7 boxes = total 448 support feet

Ex. B100: = 420 pcs / (36 pcs/box) = 11.66 boxes = 12 boxes = total 432 support feet

It is recommended to place Ground Care pads beneath the B supports, to protect the waterproof layer and avoid movement of the support feet. The Ground Care pads shall be positioned at the module intersections, where each pad can accomodate four feet. For the fifth, centrally positioned support feet, the Ground Care pads may be cut into quarter pieces.

The formula to establish the number of Ground Care pads necessary is:

$$\text{Ground Care: nr. B support feet} \times 0.25$$

The Ground Care pads are available in two thicknesses.

GROUND CARE	PIECES PER BOX
3 mm	100
5 mm	60

Ex. $420 \text{ supports} \times 0.25 \text{ Ground Care/supports} = 105 \text{ Ground Care}$

Ex. Ground Care 3mm: $105 / 100 = 2 \text{ boxes} \times 100 = \text{total } 200 \text{ Ground Care } 3\text{mm}$

Ex. Ground Care 5mm: $105 / 100 = 2 \text{ boxes} \times 60 = \text{total } 120 \text{ Ground Care } 5\text{mm}$

7. CALCULATION OF NM PEDESTAL LINE

The NM range consists of the following elements:

- NM1, NM2, NM3, NM4 and NM5 adjustable pedestals
- Extensions
- Roofinggreen heads
- Flat heads
- Galvanized steel bars
- Rubber adhesive tape
- Ground Care pads

The first step is to identify the appropriate pedestals in function of their height range.

For practical purposes, we calculate with the total height of the finished surface, including NATURE M20 DRAIN panels, but excluding the length of the grass itself. The intervals for the various supports are:

NM PEDESTALS	TOTAL HEIGHT INTERVAL	NR. PIECES PER BOX
NM1	9.5 - 11 cm	20
NM2	11 - 14.5 cm	20
NM3	13 - 17 cm	20
NM4	16 - 23 cm	20
NM5	22 - 34 cm	20
EXTENSION	+ 14 cm	30

The NM pedestals shall be placed at 50cm intervals, at the module intersections. (fig. 6).

SUPPORTI NM

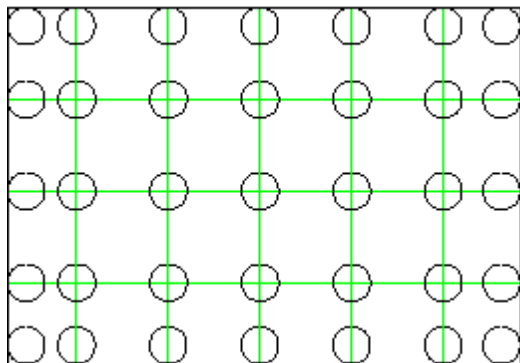


Fig. 6

For rectangular surfaces the following formula can be applied to calculate the number of pedestals:

$$\text{NM Pedestals} = (nr. \text{ horizontal panels} + 1) \times (nr. \text{ vertical panels} + 1)$$

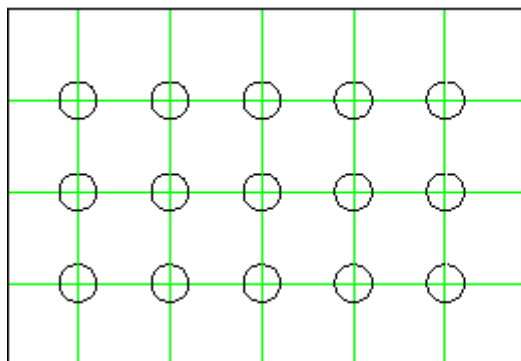
Ex. Fig. 6: $(6+1) \times (4+1) = 7 \times 5 = 35$ pedestals

35 pedestals = 2 boxes x 20pcs = 40 pcs total

Each pedestal will be paired with a connection element to the panels, i.e. the heads, which are of two types: the Roofinggreen connection heads and the flat heads.

The Roofinggreen heads are to be fitted onto the centrally positioned pedestals (defined as all those at the intersection of four panels), whereas the flat heads shall be placed on the pedestals around the surface perimeter (fig. 7)

TESTE ROOFINGGREEN



TESTE PIATTE

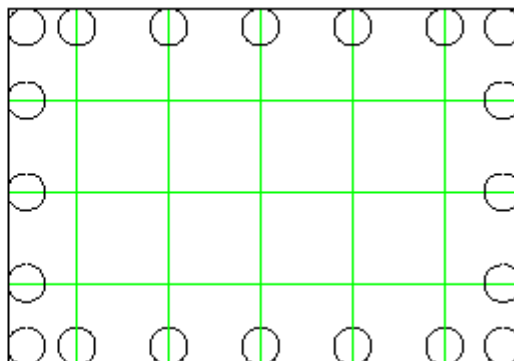


Fig. 7

For rectangular surfaces, the following formulas can be applied to calculate respectively the number of Roofinggreen heads and the flat heads;

$$\text{Roofinggreen Heads} = (nr. \text{ horizontal panels} - 1) \times (nr. \text{ vertical panels} - 1)$$

The Roofinggreen heads are supplied in boxes containing 40 pieces.

Ex. fig.7 : $(6-1) \times (4-1) = 5 \times 3 = 15$ Roofinggreen heads.

15 Roofinggreen heads = 1 box x 40 = total 40 Roofinggreen heads

$$\text{Flat Heads} = (nr. \text{ horizontal panels} \times 2) + (nr. \text{ vertical panels} \times 2)$$

The flat heads are supplied in boxes containing 25 pieces.

Ex. fig.7: $(6 \times 2) + (4 \times 2) = 12 + 8 = 20$ flat heads

20 flat heads = 1 box x 25 = total 25 flat heads

The galvanized steel bars of 45cm length are to be positioned between one head and the next. (fig.8)

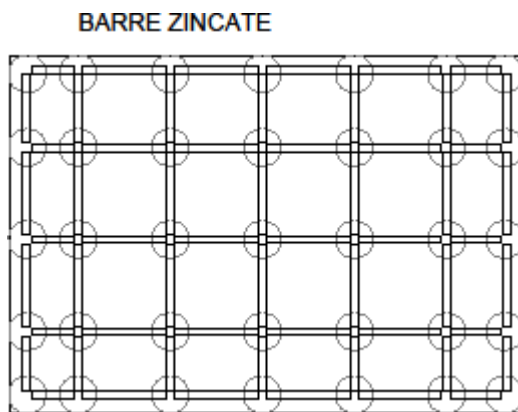


Fig. 8

For rectangular surfaces the following formula shall be used to calculate the number of bars:

$$\text{Nr. Bars} = [2 \times (nr. \text{ horizontal panels} \times nr. \text{ vertical panels})] + nr. \text{ horizontal panels} + nr. \text{ vertical panels}$$

Ex. fig. 8: $= [2 \times (6 \times 4)] + 6 + 4 = 58$ bars

The adhesive rubber tape to be attached to the upside of the metal bars:

$$\textbf{Adhesive Rubber Tape} = nr. bars \times 45cm$$

The adhesive rubber tape is supplied in rolls of 25m length

Ex. $58 bars \times 0.45m = 26.1m / 25 = 2 rolls \times 25 = total\ 50\ meters$

There is also the option to place Ground Care pads (size 30 x 30cm) under the NM pedestals, to protect the waterproof layer, and avoid any risk of movement.

The formula to calculate the number of pads is:

$$\textbf{Ground Care:} nr. NM pedestals \times 1$$

Ex. $35 pedestals \times 1\ Ground\ Care/pedestal = 35\ Ground\ Care$

Ground Care pads are available in two thicknesses of different sizes.

GROUND CARE	PIECES PER BOX
3 mm	100
5 mm	60

To recap, the calculation of the various parts of the NM support system (for rectangular surfaces only) is as follows:

Ricapitolando, i vari elementi da computare per il sistema di supporto NM e le relative formule (valide solo per superfici rettangolari) sono:

$$\textbf{NM Pedestals} = (nr. Horizontal panels + 1) \times (nr. vertical module + 1)$$

$$\textbf{Extension} = nr. pedestals$$

$$\textbf{Roofinggreen Heads} = (nr. horizontal panels - 1) \times (nr. vertical panels - 1)$$

$$\textbf{Flat Heads} = (nr. horizontal panels \times 2) + (nr. vertical panels \times 2)$$

$$\textbf{Steel Bars} = [2 \times (nr. horizontal panels \times nr. vertical panels)] + nr. horizontal panels + nr. vertical panels$$

$$\textbf{Adhesive Rubber Tape} = nr. steel bars \times 45cm$$

$$\textbf{Ground Care:} nr. NM pedestals \times 1$$



8. PARAMETRIC VALUES COMPUTATION TABLE *

In case there is no detailed floorplan available, but only a generic surface area, it is possible to perform a preliminary computation of the necessary quantities of different products, based on the values per square meter as listed in the table below.

For a final quotation it will be necessary to confirm the exact quantities based on a detailed floor plan and correct calculations.

ELEMENT	PARAMETRIC VALUE
Grass Panels	4 pcs/m ²
Geodreno	1 m ² /m ²
B range Supports	20 pcs/m ²
NM range Pedestals	5 pcs/m ²
Extension	5 pcs/m ²
Roofinggreen Heads **	5 pcs/m ²
Galvanized Steel Bars	9 pcs/m ²
Adhesive Rubber Tape	4.05 m/m ²
Ground Care Pads	5 pcs/m ²

* The parametric values, compared to the geometric values, are slightly rounded off upwards in order to provide a preliminary quotation as close as possible to the final one.

**For the purpose of the preliminary quotation, the Flat Heads can be assimilated to the Roofinggreen Heads, since it is not possible to establish a parametric value.