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**Permanent formworks  
for self-bearing  
perforated floors**



KEY:



Air, moisture, unpleasant smell



Composting, biofiltration, waste stabilisation



Phytopurification



Food storage rooms



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Eolo represents the efficient, fast and economic remedy for the realisation of a perforated floor in reinforced concrete with high load-bearing capacity, which can be also accessed by heavy vehicles.

Thanks to the vertical asymmetric nozzles, axially perforated, it can be conveniently used for the distribution of air in composting, waste stabilisation systems, deodorising systems and for aerating the floors of the storage rooms for the storage/curing of food products.

It is known since ancient times that storage aeration was required to avoid the formation of humidity which lead to the spreading of undisturbed mould and bacteria, deteriorating the goods (David Macaulay "la città Romana").

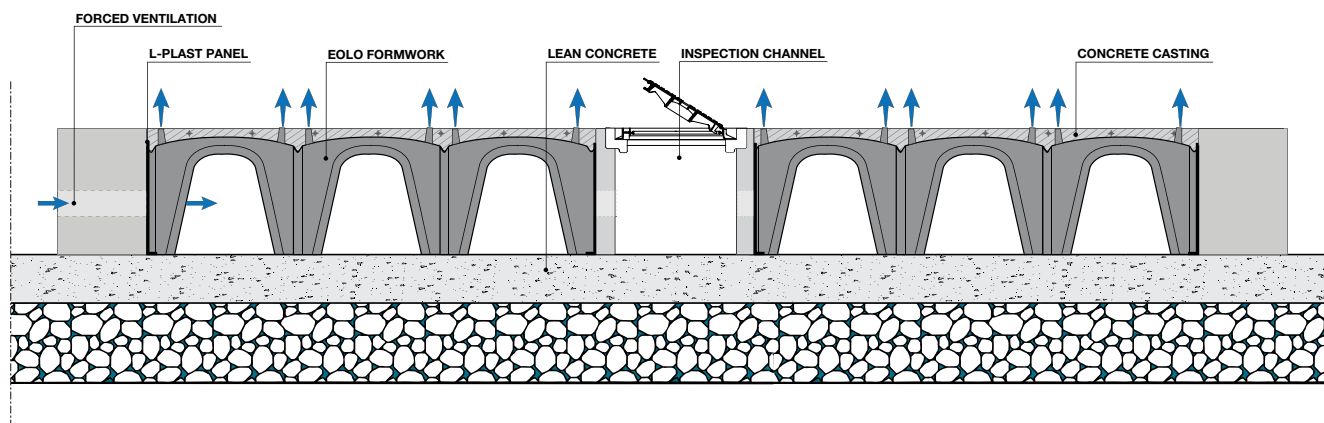
Eolo is constructed with recycled plastic and it is eco-compatible, and it is composed of special high nozzles which permit the realisation of a 6 cm high perforated plate.

Through the Eolo elements the air is uniformly distributed in the air cavity and it is then blown into the overhead environment.



## Advantages

- Efficient ventilation in all directions thanks to the cavity created by the Eolo formworks.
- High load-bearing capacity of the structure both in terms of static loads and in terms of moving heavy vehicles.
- Ease of positioning due to lightness and simple linking of the modules.
- Possibility of maintenance/cleaning through the inspection channels.
- Reduction of reinforcement time thanks to the presence of spacers integrated with the nozzles which host the welded mesh.
- Collection of possible leachate.



## Applications

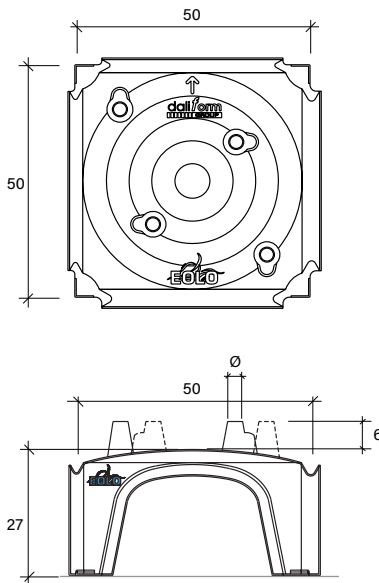
Eolo is used in all applications which require the presence of self-bearing perforated floors and with high resistance both in terms of static loads and in terms of moving heavy vehicles, such as:

- composting systems;
- waste stabilisation systems;
- biofiltration systems;
- phytoremediation tanks;
- food storage rooms.



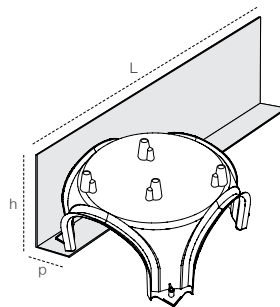


## Technical data



Working dimensions	cm	50 x 50 x 27 h
Quantity of concrete to the crown	m <sup>3</sup> /m <sup>2</sup>	0,040
Weight per piece	kg/pcs	1,974
Nozzles height	cm	6
Nozzles interior diameter Ø	Ø mm	27,5 ± 0,5
Pallet dimensions	cm	110 x 110 x 248 h
Pallet m <sup>2</sup>	m <sup>2</sup> /PAL	55
Pallet pieces	pcs/PAL	220
Pallet weight	kg/PAL	447

\* Considering the recycled material, a dimensional tolerance of ± 2,5% is admitted for the formwork's dimensions and a tolerance of ± 0,5% is admitted for the nozzles' diameter.



L-Plast h panel	cm	25
L-Plast L panel	cm	205
L-Plast p panel	cm	7

4 plugs to close the nozzles are included.

## Installation and cement casting



Fig. 1 - Dry positioning of the first formwork, the arrow is facing the foundation curb.

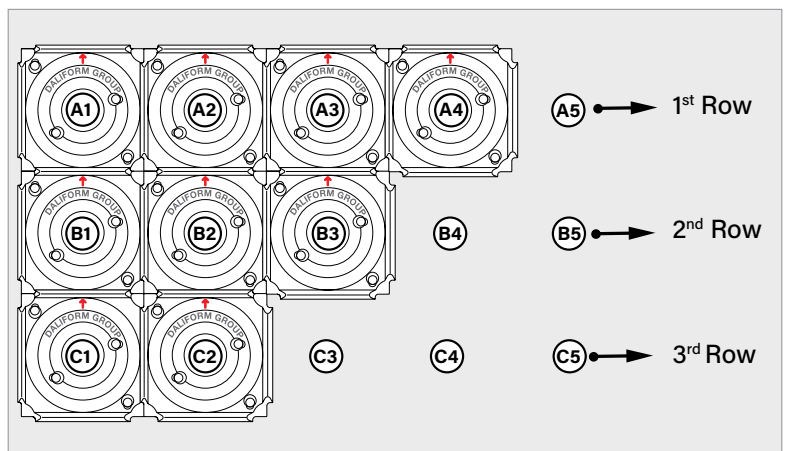


Fig. 2 - Dry positioning sequence of the modules by row.



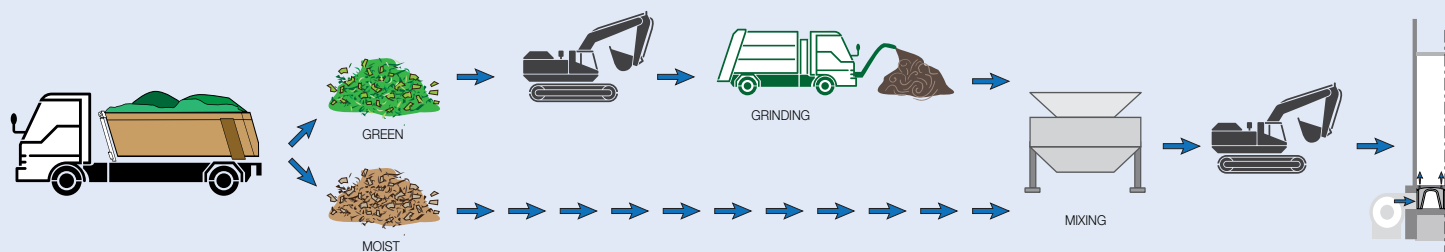
- 1 Position the first element to the upper left with respect to the work surface, making sure that the arrow is pointing up (Fig. 1).
- 2 Unite the elements in sequence, by horizontal row, proceeding from the left towards the right and from the top downwards (following the direction normally used for writing), as shown graphically on the crown of each unit (Fig. 2).
- 3 Laying the steel reinforcements using the notches next to the nozzles, specifically created for hosting the reinforcements.

4 Casting of concrete of 6 cm of height, starting from the centre of the arc, letting it go inside the legs of Eolo. Subsequent vibration.

5 Removal of Eolo plugs following the solidification of the cement casting.

## Application example: composting

### Process for the recovery of waste organic material



Composting is a technique which controls, accelerates and improves the natural process of any organic substance because of the effect of the microbial flora which is naturally present in the environment. High concentration in humus, in active microbial flora and in micro-elements make the compost a product which is suitable to various agronomic uses, from gardening to open field farming.

Composting is basically composed of two phases:

- **Bio-oxidation**, which consists of the hygienisation of the mass: this is the active phase (also known as high rate, active composting time), characterised by intense processes of degradation of the organic components which are easily degradable.  
Eolo permits the uniform and homogeneous distribution of air inside the whole fermenting biomass which leads to a reduction of the process time and it ensures an optimal level of stabilisation.
- **Maturation**, during which the product stabilises itself and it becomes rich of humic molecules: this is the curing phase, characterised by transformation processes of the organic substance with the formation of humic substances.  
The use of Eolo is necessary for the realisation of a perforated floor which permits the air insufflation to make this process more efficient.

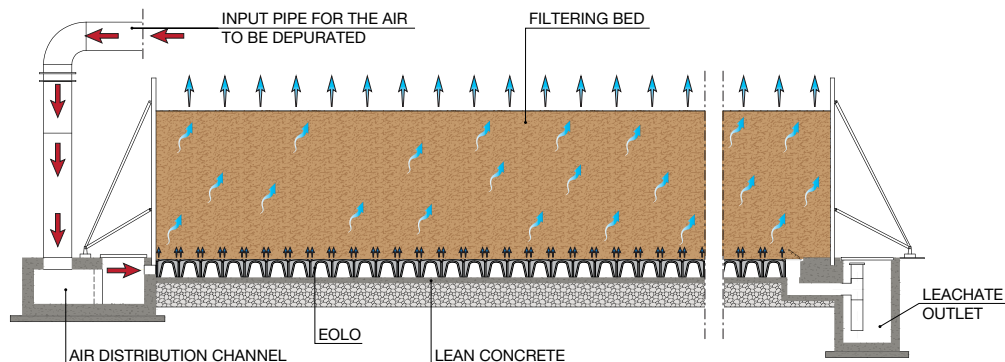
## Application example: biofiltration

Biofiltration is a process for reducing the polluting substances in the air which uses biological oxidation: the contaminated air is lead through a means which contains microorganisms capable of decomposing the polluting substances using them as a nutrition source.

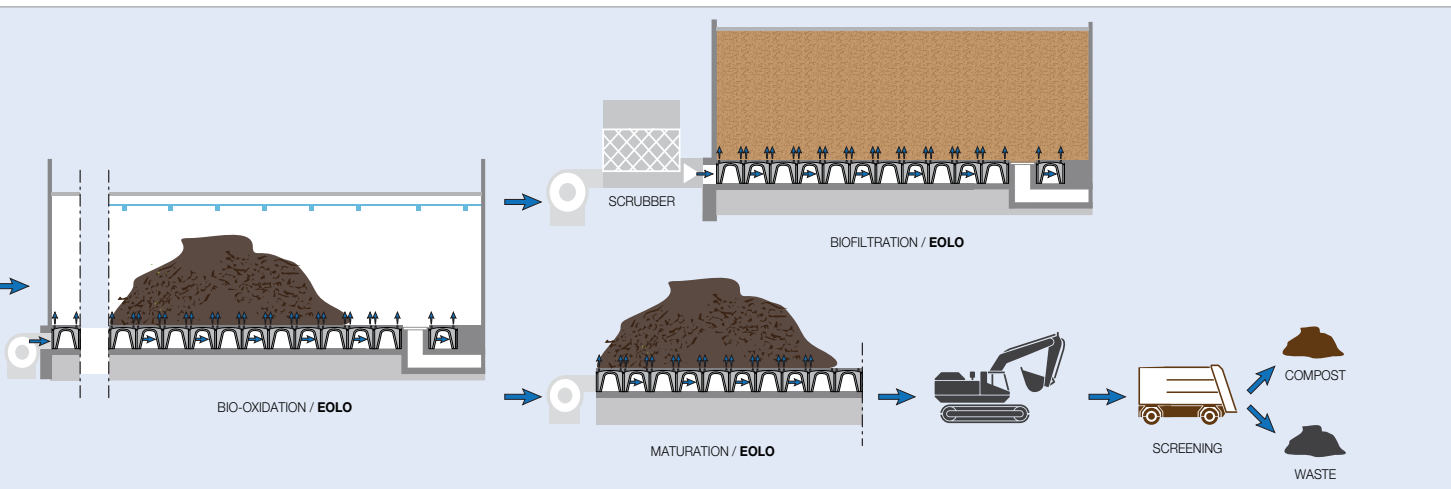
Basically the system permits to obtain the same results of combustion, with the exception that oxidation of volatile organic mixtures with carbon dioxide is not done thermally but biologically; if the mixtures contain sulphur, nitrogen or chlorine, then the sub-products of the oxidation are mineral salts. These applications are economically more advantageous than the combustion systems, both in terms of construction and maintenance, but they require a good design to be capable of showing an optimal utilisation.

With Eolo it is possible to realise a perforated floor thanks to the nozzles which allow the regular and uniform distribution of air. Through the air cavity which is created thanks to Eolo and its output nozzles, the distribution of air is uniform over the whole surface of the filtering bed.

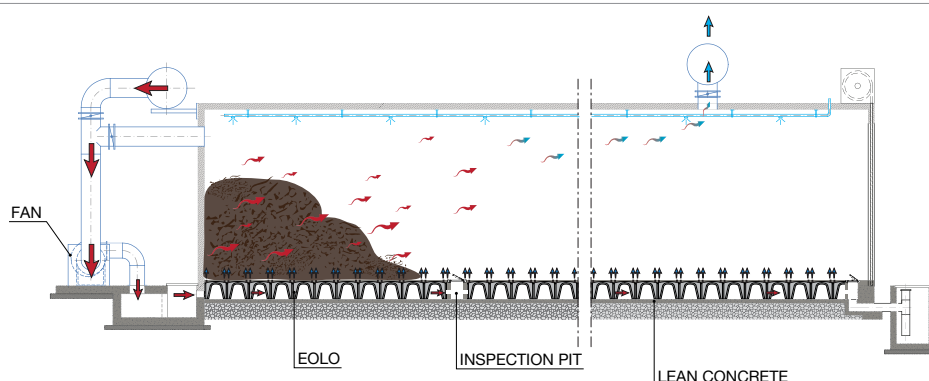
### Biofiltration







## Composting



## Application example: food storage room



It is known since ancient times that storage aeration was required to avoid the formation of humidity which lead to the spreading of undisturbed mould and bacteria, deteriorating the goods (David Macaulay "la città Romana").

It is also well known that air hardly moves horizontally, if not when appropriate conditions of temperature and pressure exist, and it is for this reason that air cavities were created inside the buildings.

Daliform Group, in order to facilitate the movement of the air inside the air cavities, has created **Eolo**, an asymmetric aeration system. The various points for drawing the air in the air cavity, which is however in vertically stratified temperature and density conditions, permit the possibility of micro-injections of natural air circulation and facilitate, therefore, vertical air circulation.

The even more asymmetric contribution due to the air temperature and density, inside the stored food products, facilitates the natural trigger of the abovementioned movements, increasing the possibility of preserving the products.

Apart from this, there are also variable notches on asymmetric cones, which can host welded mesh, to be placed in the upper part during the reinforcement phase, which facilitate the preparation to the floor cement casting over which, once the work is finished, the food products can be placed.

To contact the technical office:

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For obtaining updated technical cards, supporting material, new pictures and "case studies" please visit the website [www.daliform.com](http://www.daliform.com)

The technical consultancy is only valid for the Daliform Group construction systems.

## Specifications

Implementation of a ventilated under-ground cavity with the supply and on-site positioning of recycled plastic Eolo formworks from the Daliform Group for the quick dry formation of a self-bearing pedestrian accessible platform above which concrete (minimum resistance class C25/30) is cast to fill the formwork up to its crown and an upper slab of \_\_\_\_\_ cm reinforced with rebars of diameter Ø \_\_\_\_\_ cm 20 x 20 cm, levelled and smoothed with a plastering trowel.

Eolo formworks must have dimensions of 50 x 50 cm (centre distance) and 27 cm in height, with a convex shape to be placed only on the four lateral feet to guarantee maximum ventilation and 6 cm high nozzles to guarantee the realisation of perforated floors for the distribution of air in composting, waste stabilisation systems, deodorising systems and food storage rooms.

Eolo formworks provide breaking resistance of 150 kg in correspondence of the centre of the arch with an 8 x 8 cm clamp.

Formworks in recycle plastic, such as Eolo , must not release polluting substances, have an Environmental Compatibility Certification and be produced by a Company Certified according to International Standards UNI EN ISO 9001 (Quality), UNI EN ISO 14001 (Environment); UNI EN ISO 45001 (Safety) and SA 8000 (Social responsibility). The company that supplies the Eolo formworks must also exhibit the product certificate approved by an EOTA member agency (European Organisation for Technical Approvals).

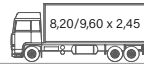


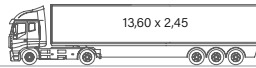


By the square meter € \_\_\_\_\_

## Supply and installation cost grid

No.	Item	U.M.	Quantity	Unit price	Total
1	Supply and casting of lean concrete with a thickness of ____	m <sup>3</sup> /m <sup>2</sup>			
2	Supply of the EOLO formwork, h 27	m <sup>2</sup>	1		
3	Dry installation of the EOLO formwork on the prepared surface	h/m <sup>2</sup>	0.0125		
4	Supply and positioning of the welded mesh Ø ____ mm - 20x20 cm	kg/m <sup>2</sup>			
5	Supply and casting of concrete C25/30 - for filling up to the crown	m <sup>3</sup> /m <sup>2</sup>			

Total cost €/m<sup>2</sup>

## Logistics - pallet capacity

MEANS OF TRANSPORT	NO. OF PALLETS	
Tractor (8.20/9.60x2.45)	14/16	
Trailer (6.20x2.45)	10	
Tractor+ Trailer type "BIG" (8.40+7.20x2.45)	14 + 12	
Semi-trailer (13.60x2.45)	24	
20 feet container	10*	
40 feet container	20*	

\* The m<sup>2</sup> per pallet can vary based on the type of container.

The information contained in this catalogue could be changed. Please request updated informations from DALIFORM GROUP, which reserves the right to make changes at any moment without notice. In consideration of recycled material, it is specified that there are tolerance margins caused by environmental factors.







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Certified Management System UNI EN ISO 9001,  
UNI EN ISO 14001, UNI EN ISO 45001, SA 8000

Partner of  
GBC Italia

Rating di legalità: ★★+