

COFFRARGILE

www.daliform.com



**Permanent formwork for
counteracting the deformation
of argillaceous foundation sediments**

LEGENDA:



Foundations



Respect for the environment



Environmentally friendly, environmentally compatible



Energy conservation



Certifications



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COFFRARGILE

With foundation problems in clayey soils, conditions which facilitate a “proactive” approach with regard the soil rarely occur within the scope of the project.

In most cases, the structure is designed and its behaviour is then anticipated as a function of the mechanical characteristics of the soil, while only seldom it's possible to act on these in order to modify unfavourable environmental conditions.

Daliform Group created Coffrargile, a permanent formwork made of recycled plastic, to effectively handle the movements of clayey soils and protect floors from shrinkage/swelling.

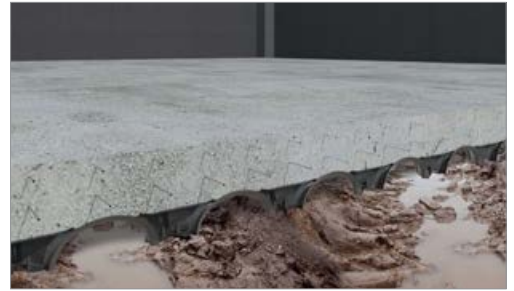
Coffrargile is used in combination with Beton Up, an accessory that prevents the reinforced concrete from forming the “pillars” typical of the classic Iglu® system.

In this way, the formworks take on the function of simple scaffolding on which a load-bearing slab of reinforced concrete can be installed with a cavity below, the purpose of which is to accommodate the swelling and shrinkage of the sediment underlying the foundation due to the special mechanical properties of clayey soils.



Advantages

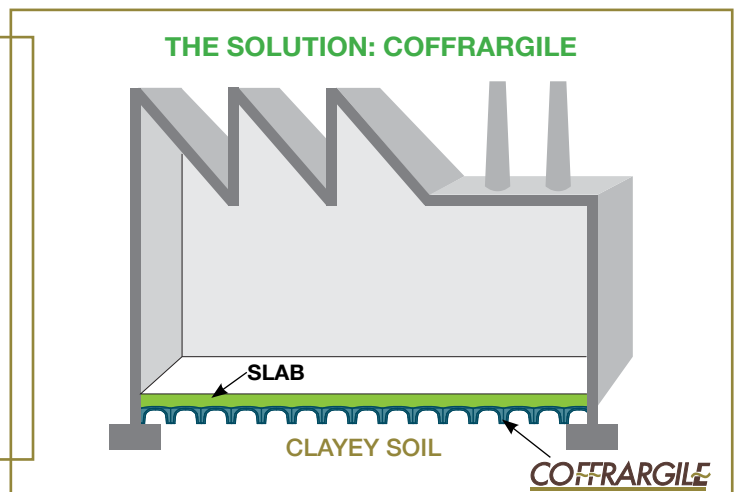
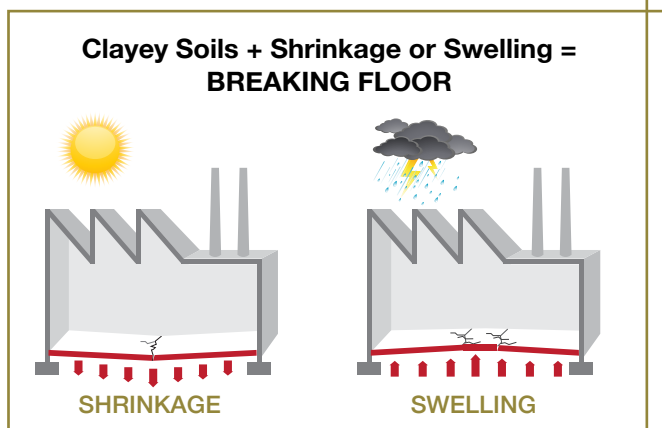
- Impervious to the weather; Compared to the alternative system which is composed of permanent formwork made of biodegradable cardboard and for which outdoor storage on building sites is unsuitable due to the risk of humidity, fog or precipitation, the Coffrargile system is impervious to the weather.
- Ease of storage and handling on site.
- Resistant to termites, insects, rodents and other animals which, can in contrast, destroy cardboard elements
- Ecological and environmentally compliant. Compared to the alternative system of formwork made of cardboard, Coffrargile leaves no compostable organic residue that can give rise to offensive odours and provide nesting material for various animals.
- Greater solidity during the setting of the load-bearing reinforced concrete slab.
- Does not transmit stresses to the structures that it supports. Coffrargile provides a void, whose height depends on the thickness of the product, under the load-bearing slab in order to adapt to any problems with the soil, regardless of the amount of swelling anticipated.
- Easy installation due to the lightness and simplicity of interlocking elements
- Supports the weight/passage of workers on site, avoiding the risk of accidents and injuries.



Behavior in the case of soil swelling



Behavior in the case of soil shrinkage



Applications

Coffrargile is the effective solution for creating cast-in-place reinforced concrete slabs that do not suffer from the effects of swelling and shrinkage inherent in clayey soils for the construction of office and commercial buildings as well as civil and industrial projects which are threatened by underlying clayey sediments.



Commercial Building



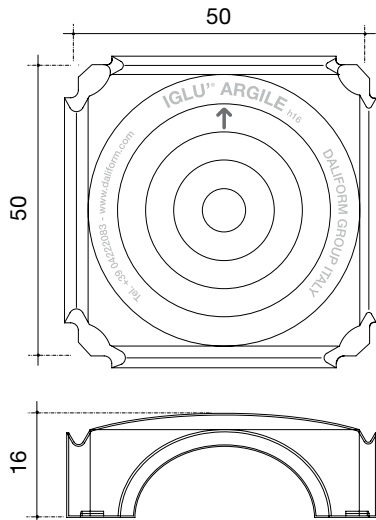
Industrial Building



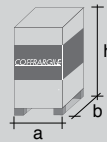
Residential Building

Technical data

Coff rargile is the permanent formwork, made of regenerated plastic that ensures a perfect surface regardless the dimensions of the slab. Its foot is shaped so as to allow the swelling of the clay without exerting any pressure on the reinforced concrete slab. Standard dimensions 50 x 50 cm - H 16 cm*.



	H cm	16*
Working dimensions**	cm	50x50
Height h tunnel clearance	h cm	11
Quantity of concrete to the crown***	m ³ /m ²	0,034
Weight of each unit	kg	1,536
Pallet dimensions	a x b x h	110 x 110 x 244
	kg	474
	Units	300
	m ²	75
L-Plast panels	H cm	14
	L cm	205
	D cm	7



The material is waterproof and can therefore be stored outside.

* Other heights are available on request.

** Recyclable material is allowed a size tolerance of $\pm 1,5\%$.

*** The volume may vary depending on the pouring condition and the tolerance of the material.

Beton Up



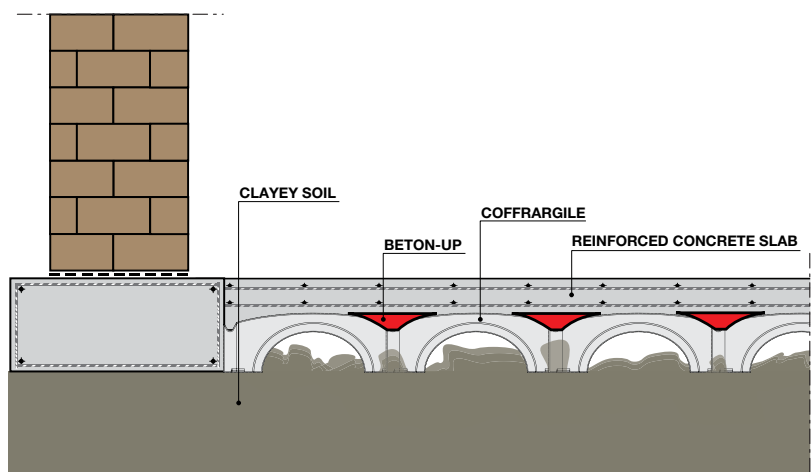
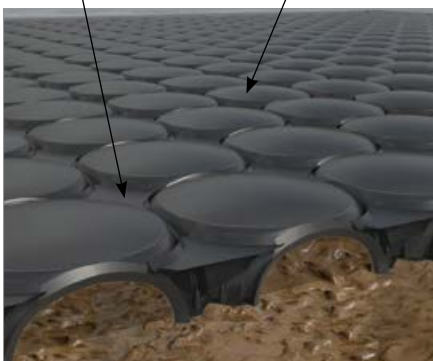
Beton Up is an accessory of the Coffrargile system which prevents the concrete from penetrating between one formwork and another and from forming legs.

In this way, the formworks take on the function of simple scaffolding on which a monolithic reinforced concrete slab that is bound to the surroundings can be installed. It should be noted that, with Beton Up, the slab is not self-supporting.

The use of Beton Up is indispensable for creating an air cavity below the scaffolding and obtaining an optimal result with the aim of ensuring that the swelling and shrinkage typical of clayey soils do not stress the scaffolding and therefore do not lead to breakage of the slab.

Beton Up

COFFRARGILE



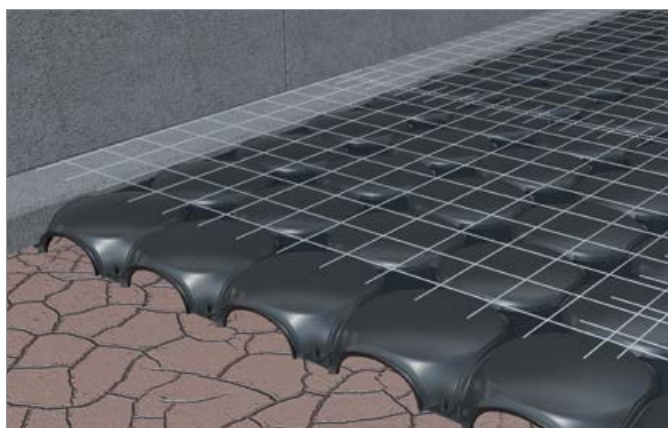
Installation



- 1 Lay the interlocking male/female formworks directly on the dry ground, from left to right and top to bottom, ensuring that the arrow marked on the Coffrargile formwork is facing up.



- 2 Place the Beton Up element above each leg to plug the hole and prevent the concrete from forming legs.



- 3 Placement of the reinforcing rods is above the formwork and above the foundation beams, according to the project.



- 4 Casting of the reinforced concrete to form a load-bearing slab that is reinforced and supported with a cavity along the edges to accommodate the movements of the ground.



To ensure a correct installation and perfectly created under-floor cavity please refer to the product's usage requirements.



Coffrargile and Beton Up installation



Casting and smoothing

Dry assembly method



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

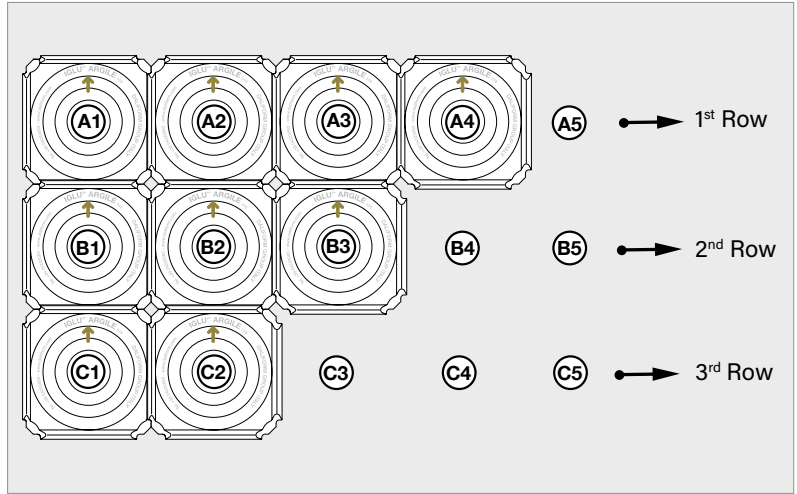


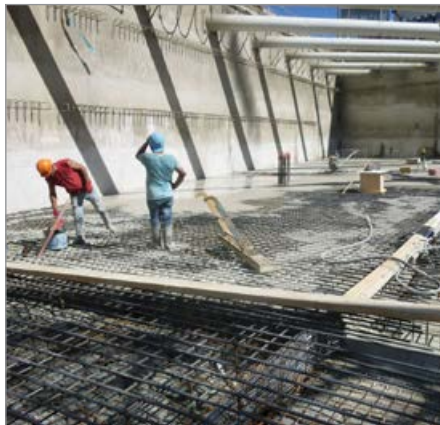
Fig. 2 - Dry positioning sequence of the modules by row.

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).



Case study: new construction on swelling clays



Client: Hertel SA
 Architectural Design: Herault Arnod Architectes
 Structural Design: Batiserf
 Technical Supervision: Alpes Controles
 Construction Company: Leon Grosse
 Surface Area: 5.000 m²
 Structural Thickness: 50 cm
 Current Condition: New construction
 Product: Coffrargile

As part of a major operation on the outskirts of Paris, we were faced with the challenge of constructing a residential complex on a plot composed of swelling clays, a situation that would surely compromise the foundations.

This situation is normally resolved by constructing the foundation on posts with a distribution mat "suspended" on their heads, a very laborious and expensive solution.

By using **Coffrargile**, in combination with its accessory Beton Up, we were able to create a simple scaffolding on which it was possible to install a 50 cm thick, load-bearing, reinforced concrete slab, with an underlying cavity, the purpose of which was to accommodate the swelling and shrinkage of the foundation sediments.

The use of **Coffrargile** with its accessory Beton Up enabled the creation of a pedestrian-accessible platform capable of bearing the 50 cm thick reinforced concrete in the design specifications.

Thanks to **Coffrargile**, which is solid and suitable for any and all weather conditions, the construction company was able to complete the work more quickly and economically than would have been possible with traditional solutions.

For the sections in which the 50 cm x 50 cm modules did not fit, the **Coffrargile** elements could easily be cut and adapted to any shape.

This project highlights **Coffrargile** as an innovative and economical technical solution for treating the problem of swelling clays.

L-Plast accessory



L-Plast is used for new constructions to create the slab and foundation beams with a single concrete casting; when restructuring is used to easily create reinforcement curbs for existing foundations.

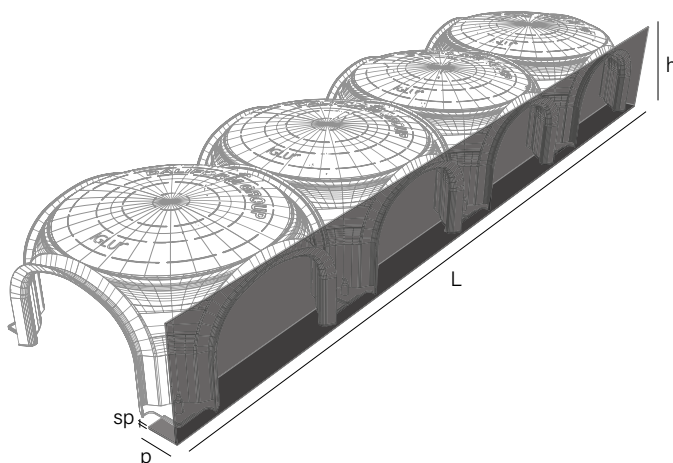
Furthermore, L-Plast is ideal for creating air ducts in general, such as for cold rooms, for example (if forced ventilation is necessary) or in geothermal applications where air must be blown into the under-floor cavity.

When restructuring, when the existing walls must be reinforced or when an underpinning must be created, L-Plast is a useful work tool that helps creating a new slab or reinforcement base with a single casting.

Advantages:

- Ease of positioning due to die cutting.
- Easy to cut to permit the passage of ventilation pipes, sewer and system piping.
- Quick to install, saving up to 80% of the time required for traditional procedures.

Height (cm)	Depth (cm)	Length (cm)	Thickness (cm)	Iglu® of reference
14	7	205	0,25	h 16



Environmental compatibility



Daliform Group has again demonstrated to be extremely precise with regard to respecting health and the environment having been the first to obtain Environmental Compatibility Certification (CCA) for its products.

This certificate is very important for Iglu® because it demonstrates: the lack of dangerous substances in its composition (even if recycled materials are used); the lack of emissivity of toxic substances during the various phases of the product's life and operating cycle, which benefits the health of the intermediate users (production and installation personnel) as well as final users (people living in the building) as well as the environment in general.

Certifications



Daliform Group products comply with the strictest international standards and have received product certifications such as BBA (UK); Technical Construction Certificate issued by the Technical and Test Institute for Constructions Prague (Czech Republic); Technical Construction Certificate issued by the Agency for Quality Control and Innovation in Building (Hungary); Hygienic Certificate issued by the National Institute of Hygiene (Poland); Acoustic verification testing according to DIN EN 29052 issued by ITA Ingenieurgesellschaft für Akustik Technische MBH (Germany); Avis Technique issued by the French CSTB [Scientific and Technical Centre for Construction]. A series of rupture load tests have been carried out and certified by the University of Padua as well as "Productive process monitoring tests".

Daliform Group technical office



FEASIBILITY STUDY

Predimensioning and optimisation of the structures, alternative and/or revised proposals, material and manpower estimates, cost analysis.
Evaluation of forced ventilation in the case of cold rooms.

CALCULATION REPORT

Reports certifying the execution of Daliform Group constructive systems.

SUPPORT FOR THE EXECUTIVE DESIGN

Support by design professionals. Upon request, the formwork positioning plan can be supplied with a list of the products required to carry out the work and the relative accessories.



ON-SITE SUPPORT

If necessary, our technical staff can be present on-site to help the construction company during the operational phase.

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

To contact the technical office: Tel. +39 0422 2083 - tecnico@daliform.com

To obtain updated technical cards, support material, new photos and case studies, go to www.daliform.com

Specifications

Installation of an elevated slab with a total thickness of _____ cm, and an underlying cavity, the purpose of which is to counteract the swelling and shrinkage of the foundation sediments which occur as a result of the special mechanical properties of clayey soils, by providing and laying Daliform Group's Coffrargile recycled plastic formwork with Beton Up elements for the rapid, dry formation of a self-supporting pedestrian platform above which to produce a reinforced concrete casting with a minimum strength class C25/30 for the construction of the elevated, reinforced slab so as to withstand the loads specified in the design, levelled and smoothed with a trowel.

The Coffrargile formworks must be spherically convex with dimensions of 50 x 50 cm, and a height of _____ cm, supported only by feet in the shape of conical frustums and have a dry breaking resistance of 200 kg at the centre of the arc by means of an 8 x 8 cm pressure plate.

The Coffrargile recycled plastic formwork must be made of "ALAPLEN® CP30" must not release polluting substances, and must be accompanied by 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 supplying the Coffrargile formwork must also exhibit the product certificate approved by an EOTA member agency (European Organisation for Technical Approvals).

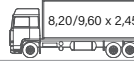





Inclusive of accessories, waste, cuttings, and all other charges: _____ /m² _____.

Supply and installation cost grid

No.	Item	U.M.	Quantity	Unit price	Total
1	Supply of COFFRARGILE formwork, h ____	m ² /m ²	1		
2	Dry installation of the COFFRARGILE formwork	h/m ²	0,0125		
3	Supply and positioning of the welded mesh Ø ____ mm - 20x20 cm	kg/m ²			
4	Supply and concrete casting CLS C25/30 - for a slab of cm ____	m ³ /m ²			

Total cost €/m²

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"	14 + 12	
(8.40+7.20x2.45)	24	
Semi-trailer (13.60x2.45)	10*	
20 feet container 40 feet container	20*	

* The m² 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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Made in Italy

dali*form*
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Building Innovation © Creatori dell'Iglù®



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

Partner of
GBC Italy

Rating di legalità: ★★+

