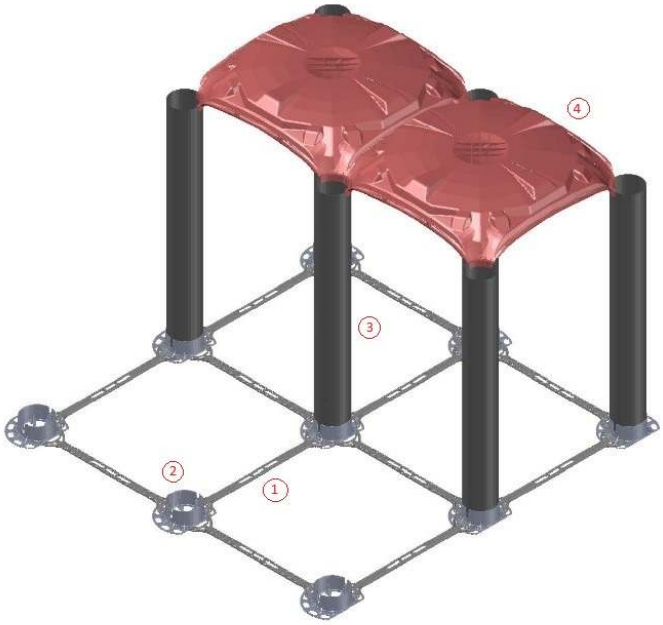
ABS Plus | Adjustable height disposable formwork system for filling applications

ABS Plus is a height adjustable disposable concrete formwork system made of recycled plastic. The system creates reinforced concrete raised floors up to 300 cm thus providing a light, fast, easy and economical filling in any structure.

ABS Plus Disposable Formwork System consists of four different elements:



1- ABS Plus - Spacer

(min. 2 max. 4 pcs per m^2 depending on the project)

2- ABS Plus - Base

(2 pcs = 1 m^2, Ø125)

3- PVC Pipe Ø125

(cut to the required heights by the project, 2 pcs = 1 m^2)

4- ABS Plus - H15 Dome

(2 pcs = 1 m^2)

The height of the ABS Plus system is adjusted by cutting the PVC pipes in advance according to the project requirements or by cutting standard length pipes on site according to actual needs. Compared to similar systems, ABS Plus system consists of 2 legs per m2, which in addition to the following advantages, provides additional ease of application, concrete and steel savings.

ABS Plus system can be used for any sort of lightweight filling application. Some areas of use are; sunken slab filling, landscape filling to create a hard surface, inverted beam filling, filling between foundation footings, carpark ramp, pool deck filling, elevator hallway filling and crawlspace construction.

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Advantages

- **The lightest solution to any filling problem;** regardless of the height, only the weight of the topping concrete is added to the structure. In addition, the arch-dome shape of the formwork reduces the required thickness of the topping concrete.
- **Unmatched logistical advantage;** the products are stackable in each other. A sample height of 100 cm can be filled with only 1 truck of disposable formworks where any other alternative filling material would require 50 trucks!
- **Very high load bearing capacity;** at a sample height of 100 cm with only 5 cm of topping concrete the live load bearing capacity is 55 kN/m2.
- **Shortening of construction time;** construction activities on upper floors may continue without waiting for the filling application below, as the filling application can be done anytime, saving very valuable actual construction time.
- **Void space creation;** the void space that gets created under the domes has a net width of 59 cm between Ø125 mm columns; meaning any sort of electrical and mechanical pipes, cables etc. can be passed in it before and after construction.
- **Fast and easy installation;** as fast as 20 m^2/hour. Installation does not require any skilled labor.
- **Ramp construction;** PVC pipes can be cut at any size needed to create a ramp.
- **Continuous concrete surface;** any sort of covering application (epoxy paint, wood flooring, asphalt etc.) can be applied on the surface very easily. Similarly, separator walls can be installed on the surface directly.
- **Heat and sound insulation;** the void space that gets created provides heat and sound insulation.
- **Radon gas and damp barrier;** if used above foundations and properly ventilated, it is the most economical and safest way for removing radon gas, humidity and damp from living quarters.
- **Environmental value;** because the disposable formworks are made of recycled PP they help to gain considerable LEED certificate points.

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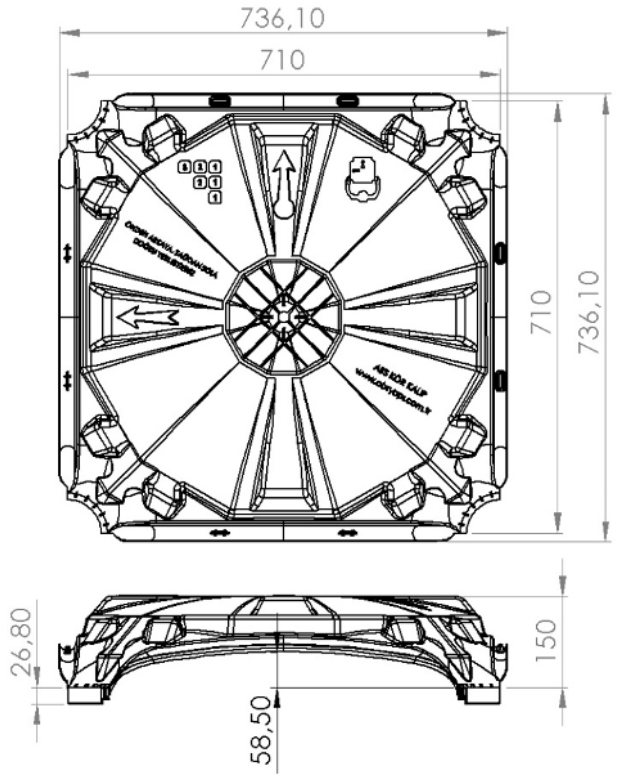
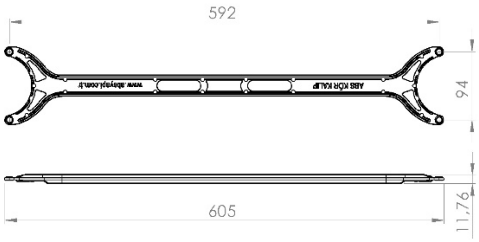
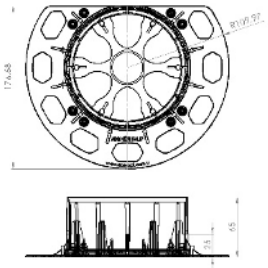
Technical Data



ABS Plus - H15 Dome (2 pcs = 1 m²)



ABS Plus - Spacer
(max. 4 pcs = 1 m²)



ABS Plus - Base
(2 pcs = 1 m², Ø125)

Dome size	71 x71	cm, 2 domes per m²
Dome height	15	cm, net height w/o leg connections
Base height	2,50	cm, 2 bases per m²
Leg diameter	Ø125	cm, 2 legs per m²
Leg height	variable	cm, depending on requirement
Number of spacers needed	max 4	lower than 50 cm heights may not require any spacer at all, however all four spacers are need for heights more than 120 cm
Material	dome, base and spacer recycled PP, leg recycled PVC	
Pallet dimensions (dome)	75 x 150 x 265	cm
Pieces per pallet (dome)	180	pieces
Area covered per pallet (dome)	90	m²
Pallet weight (dome)	361	kg
Application speed	20	m²/man-hour on a rectangular area

Formulas

h = height in cm of the topping concrete calculated separately depending on the live loads needed
H = total height of the ABS Plus system in cm before concrete casting

Leg height in cm	= H - 15 cm - 2,5 cm
Concrete consumption in m³/m²	= h/100 + 0,03554 + [(H – 15)/100 x 0,02453]

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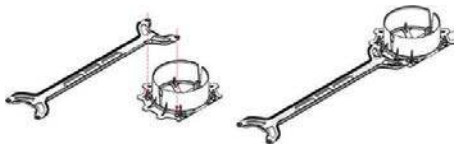
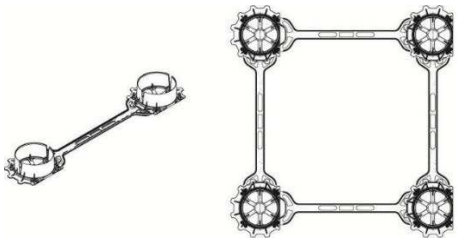
Use of Spacers

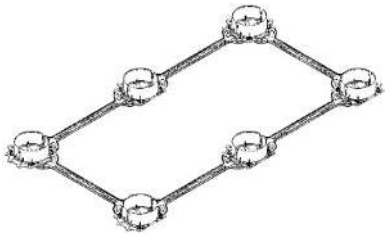
When used in all directions, a maximum 4 spacer are required per m^2. However, with respect to the application geometry, it is also possible to connect all the spacers in one direction and to skip 2 or 3 in the other 90-degree direction.

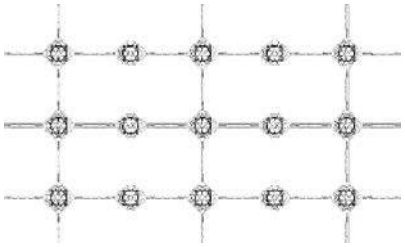
At less than 100 cm heights spacers can be completely omitted except at starting points or around columns etc. assuming a standard wet concrete pressure will be applied. Also, in ramp applications, the spacers cannot be used in the direction of the inclination.

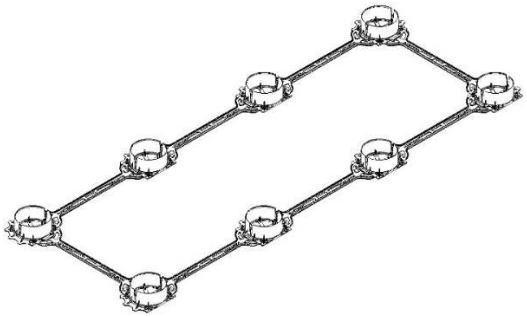


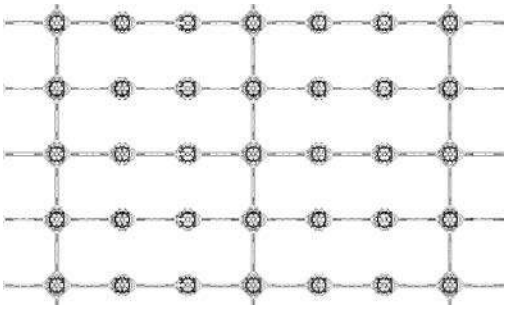


In case the applicable area surface is wide, leveled, in rectangular shape and clean of any debris, spacers may be skipped by 2 or 3 in one direction.

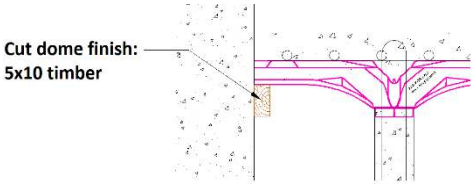


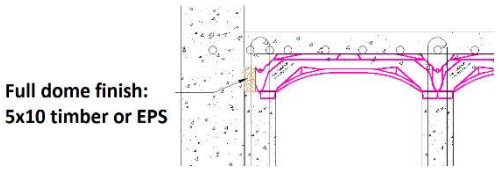






Side Finishes





Technical Specifications

Please refer to the document "Technical Specifications | Creating Reinforced Concrete Raised Floors Using Disposable Formworks" for further detailed instructions about general application guidelines.

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