



**Non-recoverable formworks for screeds
and ventilated screeds with chambers**

WWW.CAVITI.COM

Caviti system

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Caviti is a revolutionary product, which simplifies the implementation of elevated floor fittings, ventilated screeds and lightweight floor screeds with time and cost reduction.



Non-recoverable formworks for screeds and ventilated screeds with chambers

Patented product

The Caviti system, developed in 1998, was the pioneer in incorporating plastic elements as formwork for construction.

Caviti is a revolutionary product, which simplifies the implementation of elevated floor fittings, ventilated screeds and lightweight floor screeds with time and cost reduction.

The Caviti system consists of precast recycled polypropylene sections which are assembled together quickly and easily, to produce a continuous dome with its own supports, in blocks ranging from 5 to 70 cm.

Behind Caviti, there is a team of people who are convinced of the usefulness of this system and the added value it provides in construction. The team devotes all their expertise and enthusiasm to attend to clients and their specific needs.

Caviti elevated Floor Fittings reinforces the values of dynamism and customer service that have characterized the brand over the years to create a market-leading product. For this reason, we have brought together in a new project, the patent developed by Caviti, the technical support, production capacity and the guarantee of ITeC (DAU 10/060A).

Caviti, in its commitment to the environment, manufactures all its formwork with 100% recycled materials, and cares about developing quickly installed products that reduce the consumption of materials as well as implementation and installation costs.

The company is currently marketing and supporting clients all over the world. More specifically, and in collaboration with domestic companies and foreign partners, we are trading in international markets while maintaining the quality levels that are characteristic of the brand.

Caviti system

Definition

The Caviti construction system is made up from the merging of permanent formwork pieces of variable heights according to the work and project characteristics, modules are manufactured with black thermo-injected recycled polypropylene.

Caviti permanent formwork displays a sinusoidal geometry slightly flat on the upper part showing a diversity of equidistant orthogonal nerves that depart from the central part of the piece falling through its own geometry and finishing in the structural columns of the shuttering that are found in its apex.

The structural column made from the merging of four Caviti modules is completely sealed. Pieces are joined with rebates and as in the order shown by the indicative arrows that are located in the modules upper dome, so forming the screeds.

There are no special pieces for perimeters and break points with work projecting elements, the Caviti system can easily be adapted to the work geometry using conventional machinery such as a jigsaw or similar.

System Applicability

The use of the pieces Caviti is basically of forming a Non-recoverable formworks.

This one must be able to support the step of the personnel in work and the efforts provoked by the concreting.

Once the concrete has set, this resistant function is despicable opposite to that of the concrete.

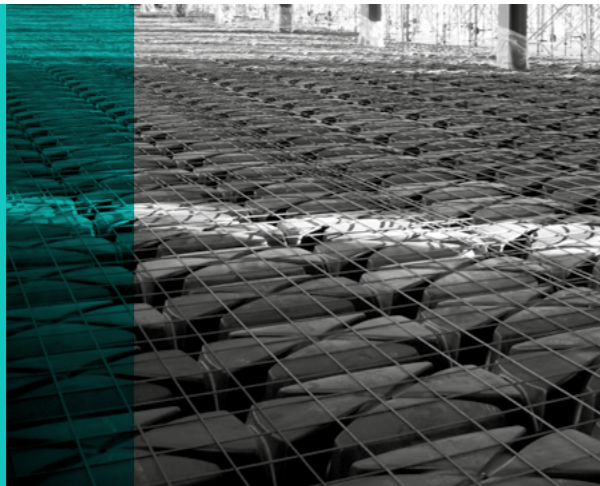
The system Caviti is destined for the following uses:

- Workmanship of elevated ware floor slabs.
- Regrown material of existing pavement.
- Refeer containers and bays.
- Redevelopment.
- Parking.
- Pedestrian zones and railway platforms.

Usage constraints

The Caviti work system cannot be used when any of the following points takes place:

- Caviti formwork is filled with sand or mortars of any type.
- Caviti formwork is filled with lightweight floor slabs; concrete with expanded clay, expanded perlite ...
- Usage with high static loads, for example, bays where plastic injection high-load machinery and specific loading is installed.
- The base has big irregular plans that avoid a good settlement of the pieces.
- Usage with high dynamic loads, for instance, parking for lorries.
- The slab width is less than 5 cm.
- No welded-mesh framework is being placed.
- Concrete to be used does not reach the minimum resistance established by Caviti.



Models and technical data of the system

Technical Data	C-5	C-10	C-15	C-20	C-25	C-30	C-35	C-40	C-45	C-50	C-55	C-60	C-65	C-70
Material	Polypropylene													
Dimensions (mm)	580x400	780x580	750x500	750x500	750x500	750x500	750x500	750x500	750x500	750x580	750x580	750x500	750x500	750x500
Overall height (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700
Interior Height (mm)	20	73	95	145	190	240	290	345	400	150	500	550	600	650
Support Area (cm ² /m ²)	792	792	1233	1120	1014	913	817	726	817	726	640	817	726	640
Concrete consumption (litres / m ²)	4,50	10,50	30	35	40	43	49	53	68	73	78	93	97	102
Pieces / m ²	4,3	2,2	2,66	2,66	2,66	2,66	2,66	2,66	2,3	2,3	2,3	2,66	2,66	2,66
Dead Weight (without D.C.) (kg/m ²)	14	24	66	77	88	95	107	117	150	160	172	236	246	260
Concrete type in c.c.	HA-250													
Type in slab concrete	HM-200													
Packing (pcs / pallet)	500	140	100	100	100	100	100	100	90	90	90	80	80	80

Live load

Models:

C-5 / C-10

Limitation of live load (Kg/m²) depending on the admissible tension.

Not even the limitation has been born in mind by moment flector not by shea forces either in the concrete of cleanliness or in the compression layer of the element Cavit.

C.C. (Compression Layer)	H.L. (Regularisation layer)	Allowable tension (Kg/Cm ²)					
		0,5	1,00	1,50	2,00	3,00	4,00
cm	cm						
5	5	5500	11000	12000	12000	12000	12000
5	10	5400	11000	17000	22000	26000	26500
5	15	5200	11000	16800	22000	33000	45000
5	20	5100	10000	16700	20000	33000	45000
8	5	5400	11000	13000	13000	13000	13000
8	10	5300	11000	16800	22000	29000	30000
8	15	5200	10000	16700	21000	33000	45000
8	20	5100	10000	16600	21000	33000	45000
10	5	5400	11000	14000	14000	14000	14000
10	10	5300	10000	16700	23000	32000	33000
10	15	5150	10000	16700	22000	32000	45000

Models:

C-15 / C-20 / C-25 / C-30 / C-35 / C-40

Limitation of live load (Kg/m²) depending on the admissible tension.

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C.C. (Compression Layer)	H.L. (Regularisation layer)	Allowable tension (Kg/Cm ²)					
		0,5	1,00	1,50	2,00	3,00	4,00
cm	cm						
5	5	392	800	1300	1800	2800	3800
5	10	950	2050	3180	4300	6550	8800
5	15	2200	3800	5800	7800	11800	15800
5	20	3000	6100	9200	12300	18500	24800
8	5	205	710	1200	1700	2700	3800
8	10	980	1970	3100	4200	6450	8700
8	15	2200	3700	5700	7700	11700	15700
8	20	3100	6000	9100	12200	18400	24700
10	5	55	660	1160	1650	2650	3650
10	10	1000	1920	3050	4150	6400	8650
10	15	2250	3650	5650	7650	11650	15650

Models:

C-45 / C-50 / C-55 / C-60 / C-65 / C-70

Limitation of live load (Kg/m²) depending on the admissible tension.

Not even the limitation has been born in mind by moment flector not by shea forces either in the concrete of cleanliness or in the compression layer of the element Cavit.

C.C. (Compression Layer)	H.L. (Regularisation layer)	Allowable tension (Kg/Cm ²)					
		0,5	1,00	1,50	2,00	3,00	4,00
cm	cm						
5	5	110	450	775	1100	1770	2440
5	10	600	1440	2280	3120	4800	6480
5	15	1300	2900	4450	6050	9200	12350
5	20	2200	4700	7300	9850	14900	20000
8	5	30	360	690	1030	1690	2360
8	10	520	1350	2190	3050	4720	6380
8	15	1250	2800	4370	5950	9100	12250
8	20	2150	4700	7200	9800	14850	19900
10	5	-	310	650	980	1650	2320
10	10	465	1300	2150	2980	4680	6350
10	15	1180	2750	4320	5900	9050	12200

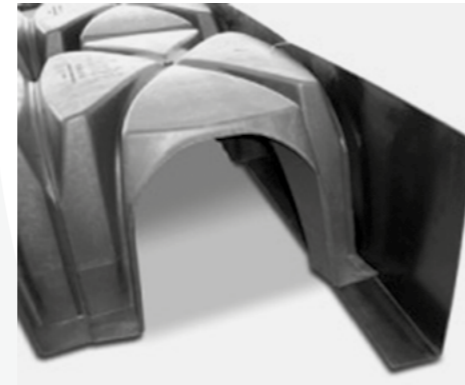
Perimeter seal profile

Definition

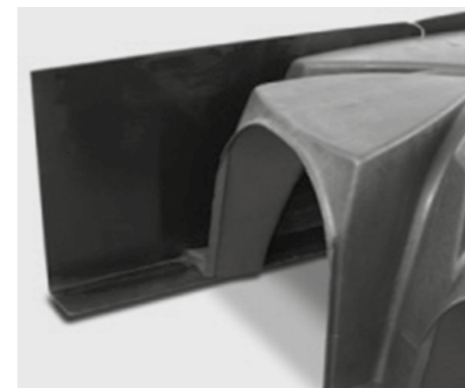
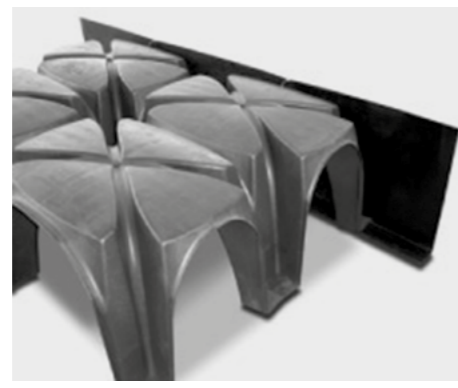
There is a polypropylene perimeter trim with variable dimensions depending on the height of the Caviti piece to be placed, which acts as a raiser, to avoid the waste of material when concreting.

This trim is fixed to the top of the pieces with wire, piercing the formwork in cases where it is necessary to cut the piece due to adjustment of the project specifications. The range of perimeter profiles comes in the same heights as the Caviti pieces. They have an 8cm strip perpendicular to the main height of the profile, which is placed under the pillars of the module to provide greater stability.

The C-5 and C-10 models do not require the use of a perimeter trim.



Reference	Material	Dimensions (mm)	Thickness (mm)
P-15	Polypropylene	(150 + 80) x 2000	4,00
P-20	Polypropylene	(200 + 80) x 2000	4,00
P-25	Polypropylene	(250 + 80) x 2000	4,00
P-30	Polypropylene	(300 + 80) x 2000	4,00
P-35	Polypropylene	(350 + 80) x 2000	4,00
P-40	Polypropylene	(400 + 80) x 2000	4,00
P-45	Polypropylene	(450 + 80) x 2000	4,00
P-50	Polypropylene	(500 + 80) x 2000	4,00
P-55	Polypropylene	(550 + 80) x 2000	4,00
P-60	Polypropylene	(600 + 80) x 2000	4,00
P-65	Polypropylene	(650 + 80) x 2000	4,00
P-70	Polypropylene	(700 + 80) x 2000	4,00



Conditions, supports and perimeters

The flatness of the support is one of the most important factors in the installation of Caviti because it is a prefabricated system formed by connecting modules that must fit together perfectly. If the support does not have a certain flatness, problems may occur during the pouring of concrete resulting in loss of material at the points where there has not been a good fit between parts.

To prevent the parts from being supported directly on the ground, a layer of blinding concrete will be laid according to the live load, with HM-20/B/12/Ila concrete or that specified in the project plan, without mesh reinforcement and with a good flatness. The differences in level will be a maximum of 1 cm.

In exceptional cases, if the ground has excellent mechanical resistance and has good planimetry, the Caviti modules can be supported directly on it.

The perimeters should not present any special condition and may be walls of reinforced concrete, resistant factory walls, dividing partitions, columns (rectangular, square or circular), struts, beams or foundation footings.

Installation rate

The installation rate of the Caviti modules is approximately 60-70 m. per worker / hour.

These values are estimates, since the installation rate depends on the geometry of the project and the experience of the personnel.

Assembly of the Caviti system

The assembly of the Caviti system is fairly simple; it is a high-performance system. It reduces the use of auxiliary means, and it shortens the time-frame for construction as a whole, in comparison with traditional sanitary framework systems.

You can successfully achieve to keep the alignment of the pillars with no possibility of error, and a performance rate around 70 m./man per hour, using a defined layout on the draft, thanks to its tongue-and-groove joint system.

When the Caviti system meets with other structural or non-structural elements, (such as pillars, perimeter walls, structural edge or ring beams, tie-beams, drainage pipes.), you simply have to cut that part and adjust it to its specific geometry. In these cases, Caviti usually recommends that polystyrene sheets be placed, acting as concrete joints, to improve the system's performance.

In the concreting stage there are no special characteristics to point out. Once you have the wire mesh in position, according to the specifications of the system and the loads defined, the concrete is poured out over the domes (by pump or by bucket). After this, it is very important to vibrate the concrete, but not very deeply in the areas where parts meet, since that is where the pillars of the system are produced. In any case there is no problem with using the manual trowel or mechanical screed.

[Download Installation Manual](#)

Types of concrete and reinforced concrete

Caviti does not define what type of concrete you should use. The type of concrete mainly depends on the expected strength of the concrete for the slab, and the environment where it is going to be placed. The type of concrete has to be defined in the drafting stage.

Caviti's Technical Department recommends using a minimum strength concrete of 20N/mm. for plain concrete, and 25 N/mm. for reinforced concrete.

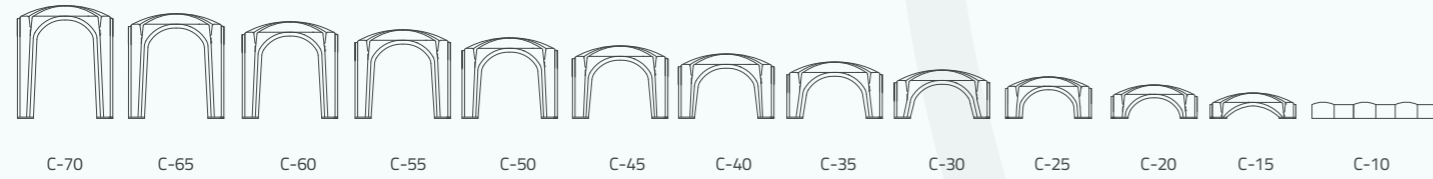
Adequate concretes are HA-25/B/25/Ila type or HM-20/B/25/Ila or superior performance concrete for standard exposure with high humidity.

Concrete can be poured out by pump or bucket. The vibration will be done with vibrating poker for pillars, poking fast so as not to open the formwork.

The electrowelded wire mesh to be used should meet the technical requirements specified in UNE 36092:96, found under the name B-500T, and with dimensions ME 15x15, ME 15x20, ME 20x20, ME 15x30 or ME 20x30 and a diameter of 6, 8, 10 and 12 mm.

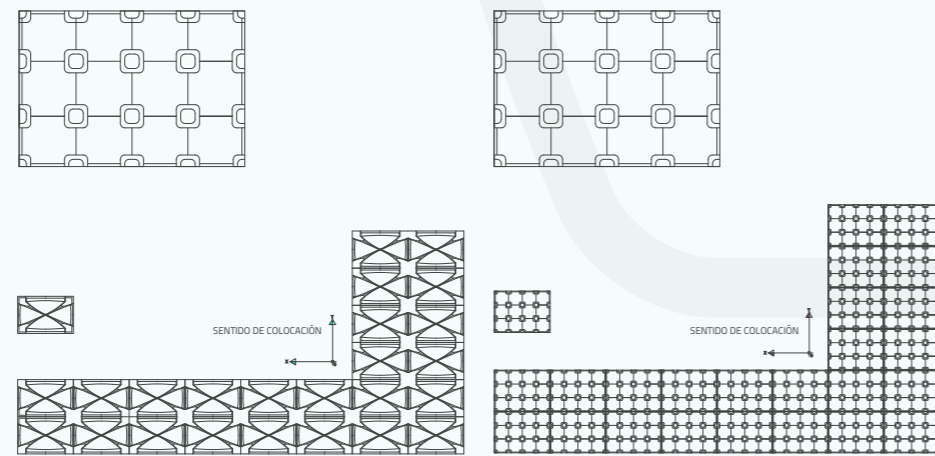
Technical details

[Download the original technical details \(AutoCad\).](#)

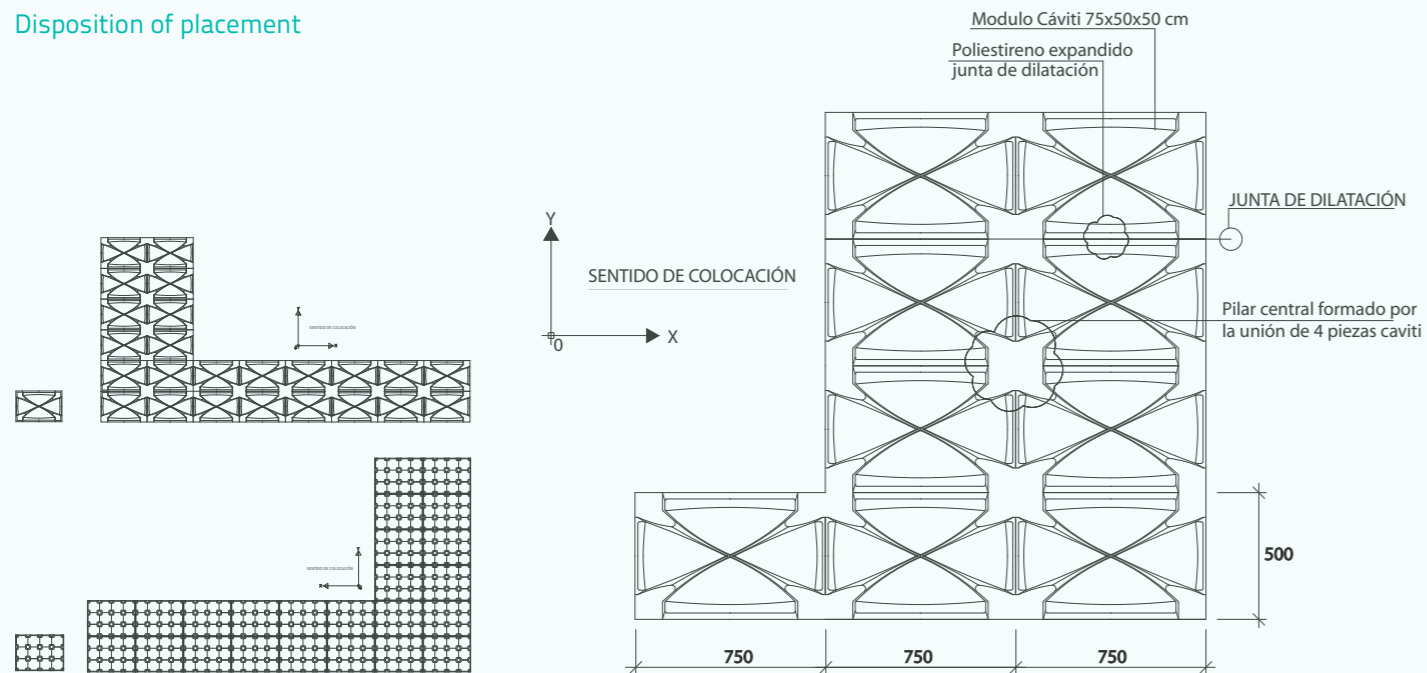


Detail Caviti modules.

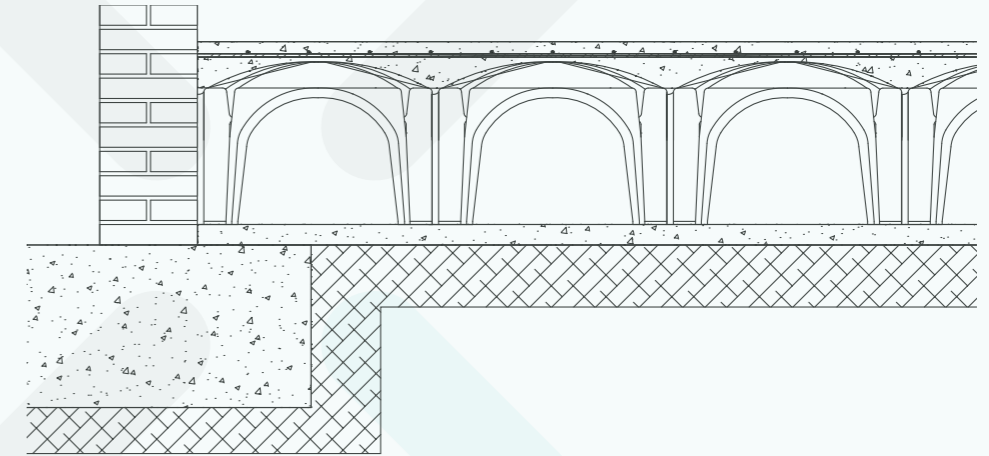
Model C-5 / 58 x 40



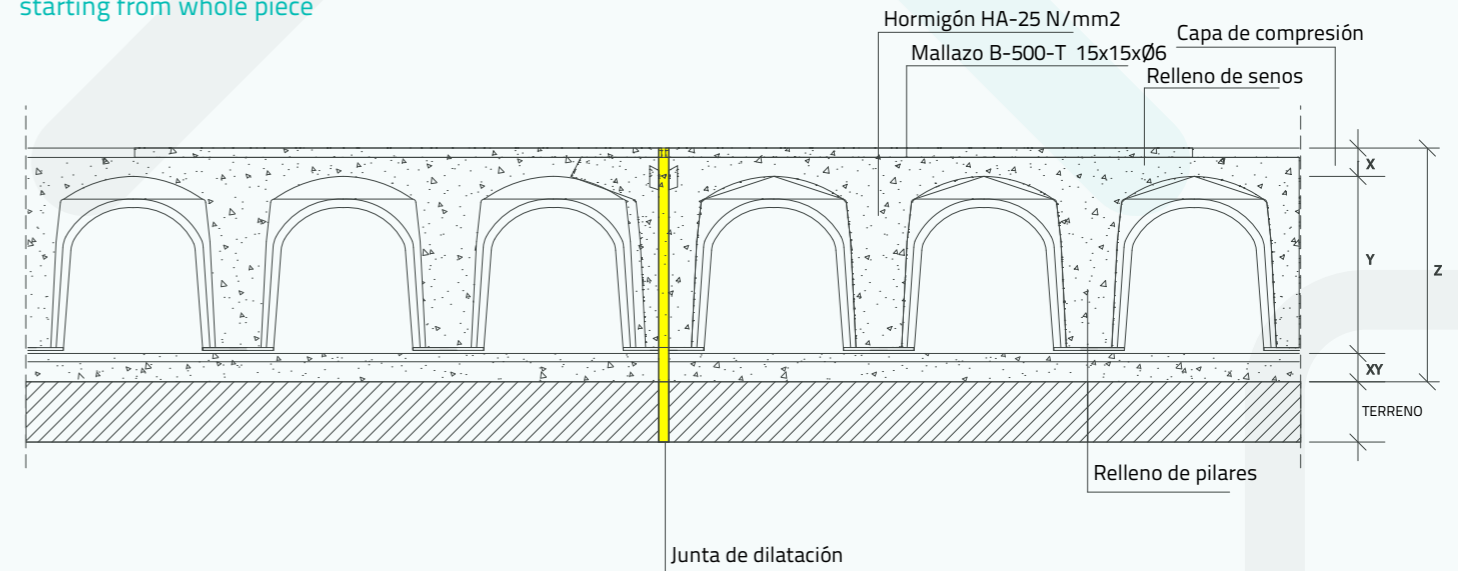
Disposition of placement



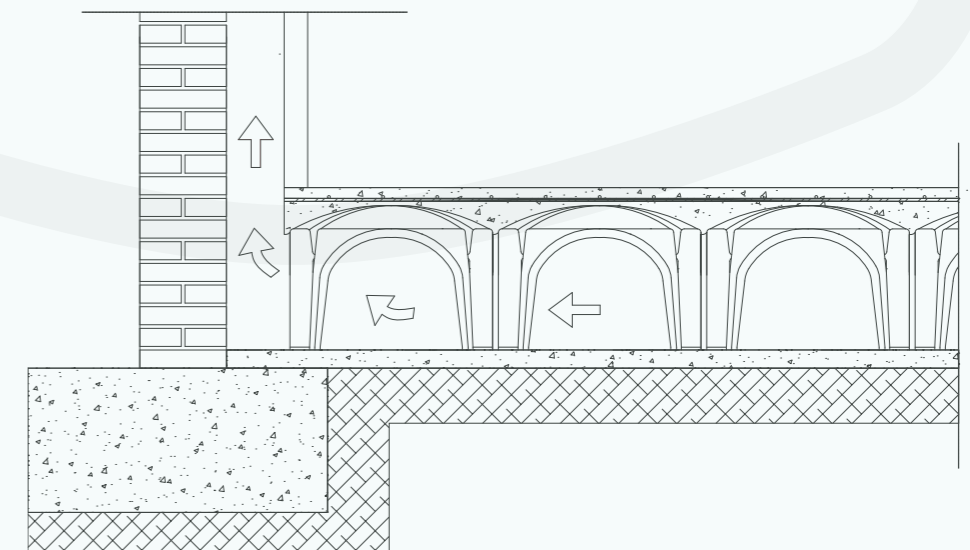
Sanitary floor



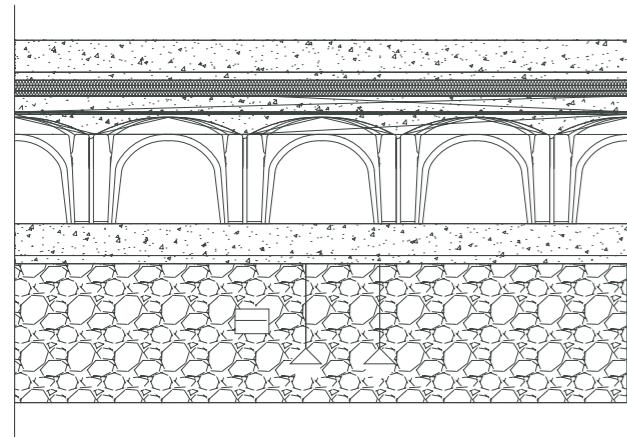
Expansion joints starting from whole piece



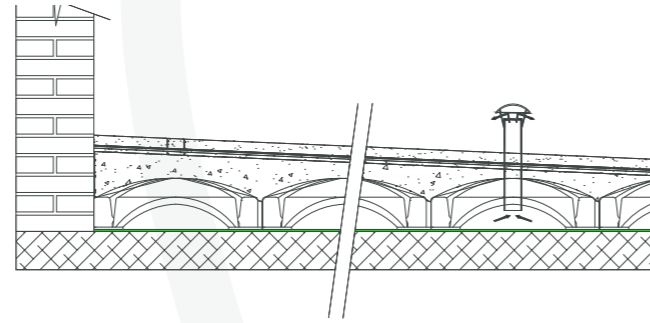
Humidity chamber



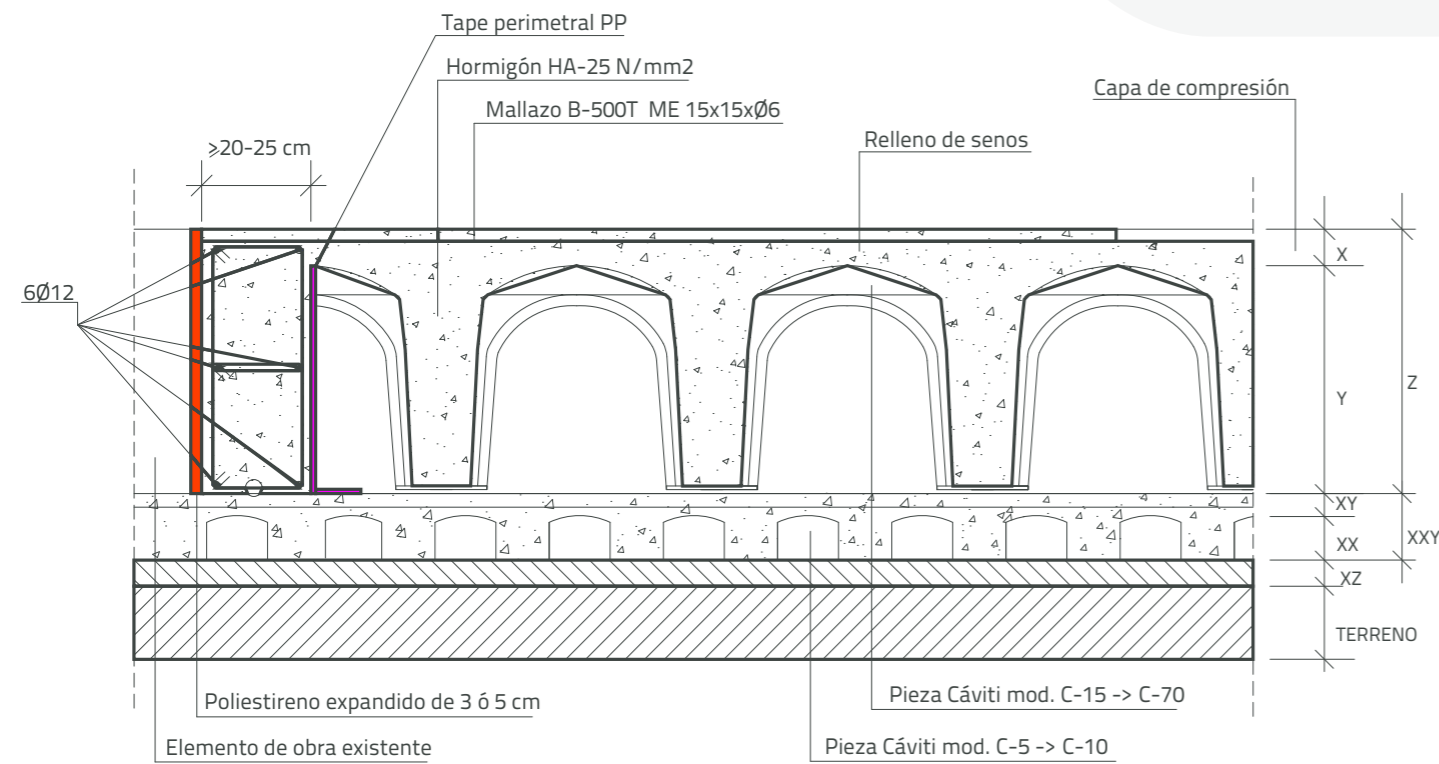
Cold storage detail



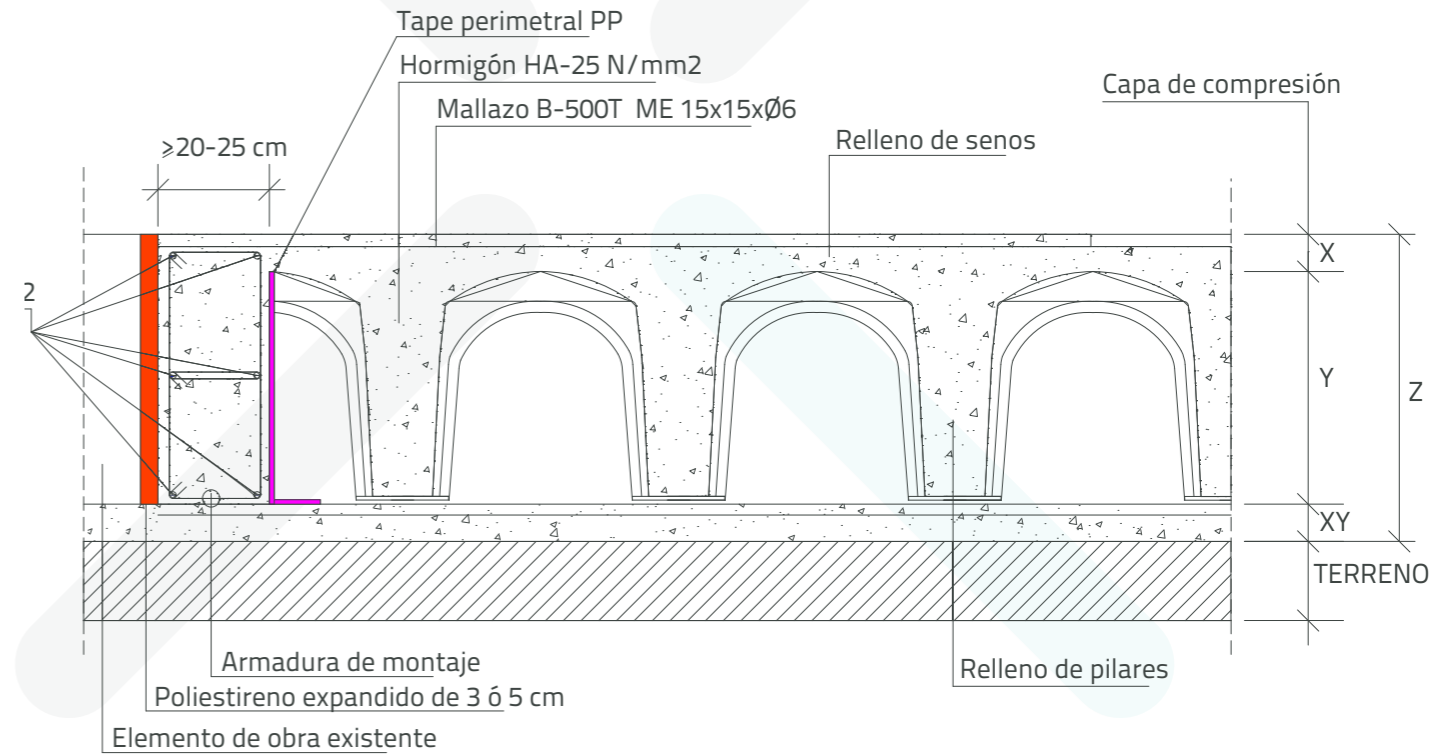
Ventilated roof



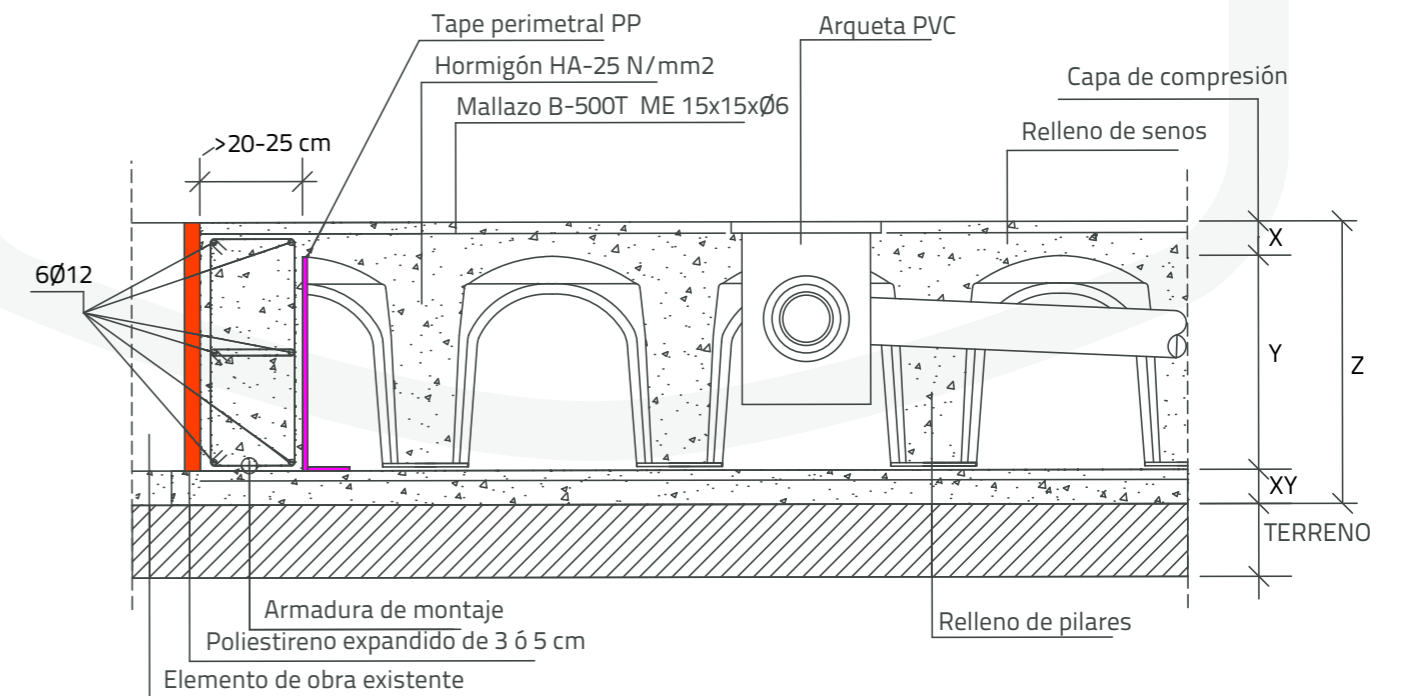
Detail of the overlap between Cavity pieces



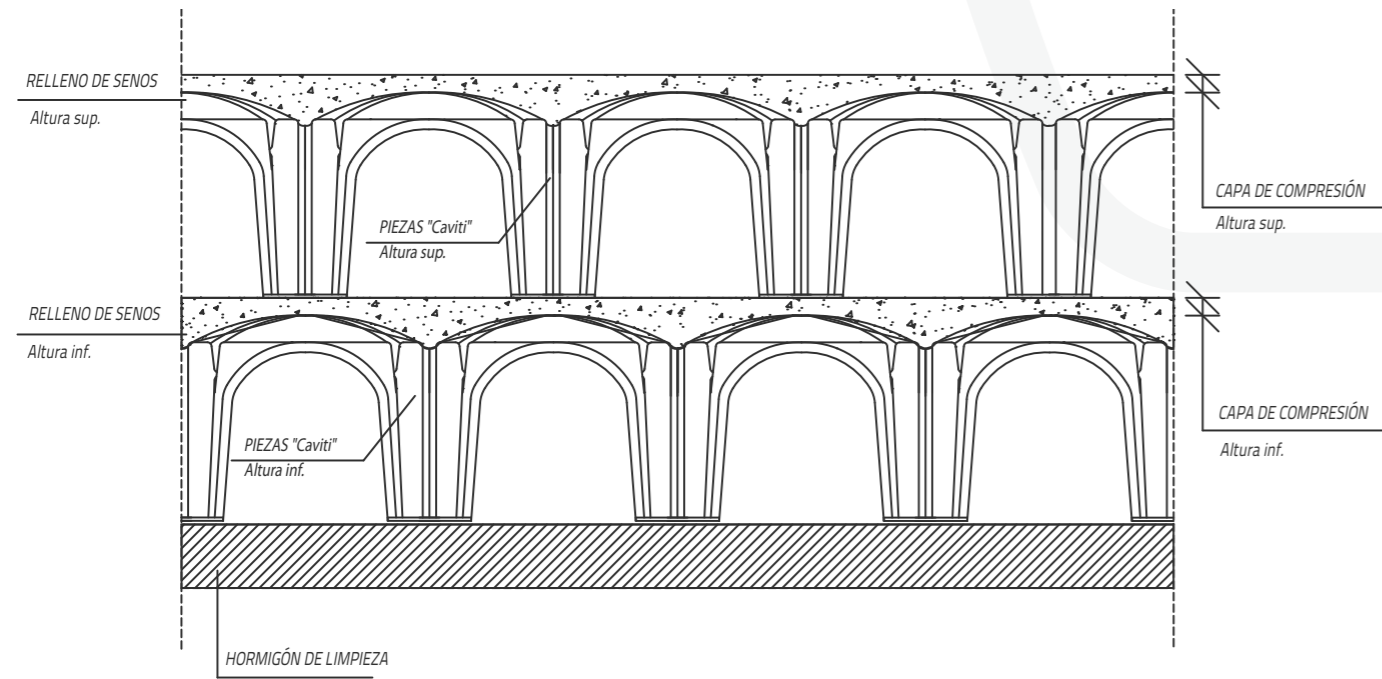
Perimeters with perimeter girder



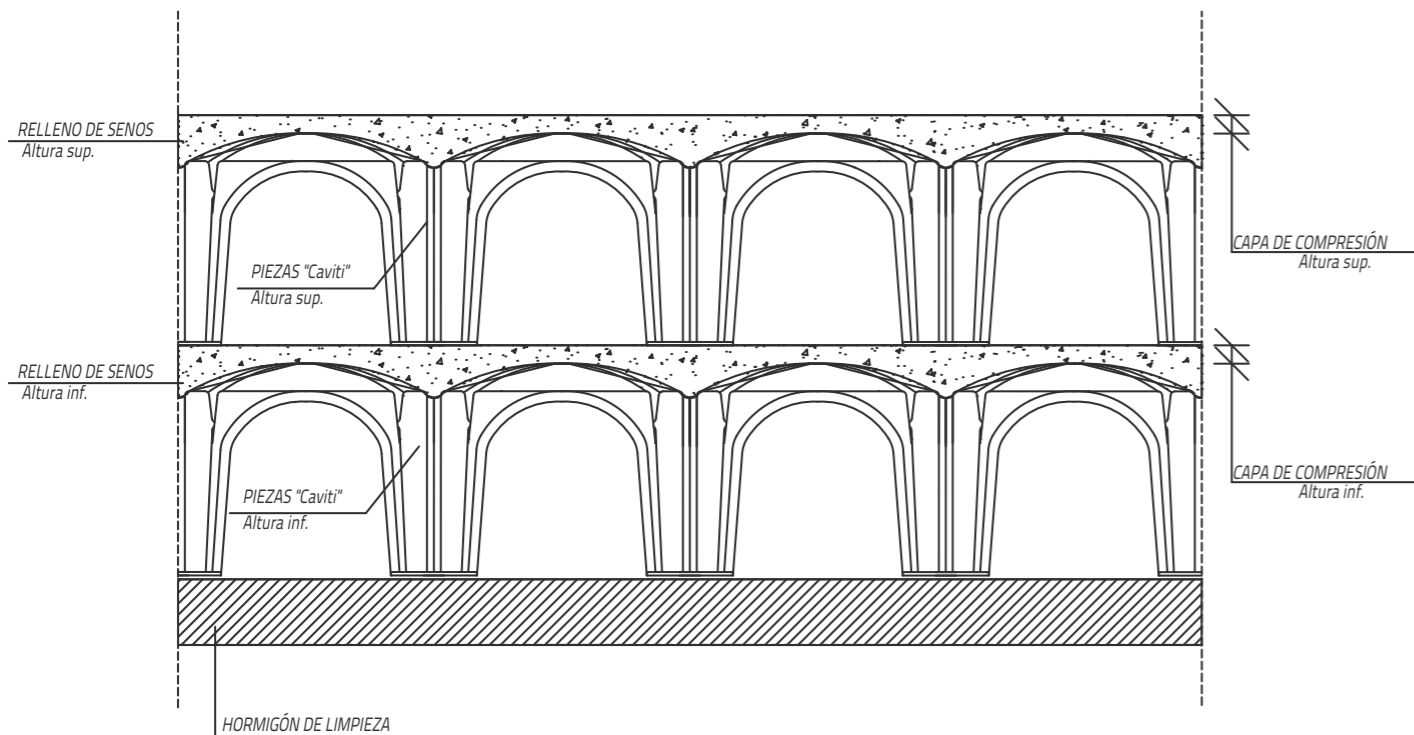
Detail of the perimeters with perimeter girder



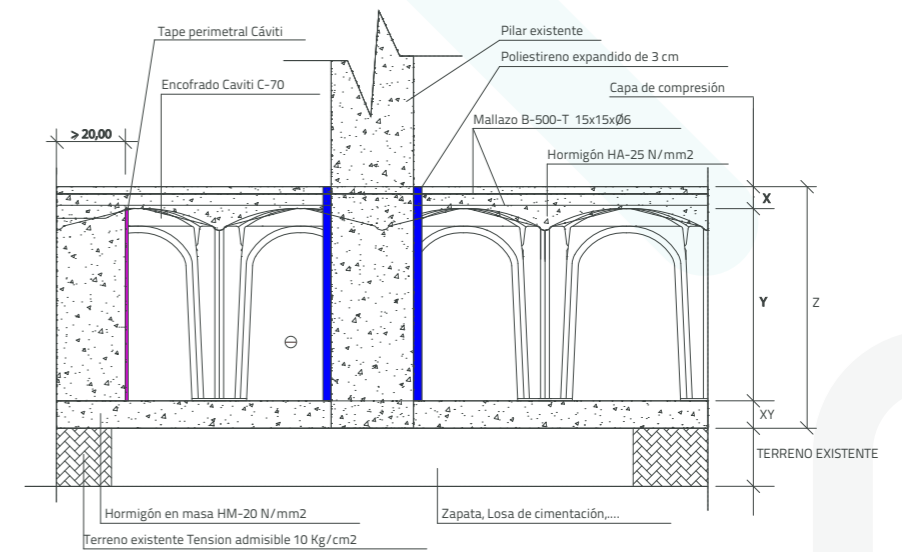
Double height Caviti
The pillars do not match



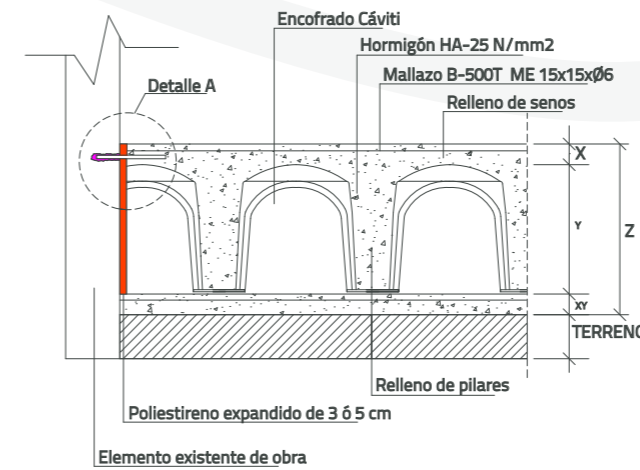
Double height Caviti
The pillars do match



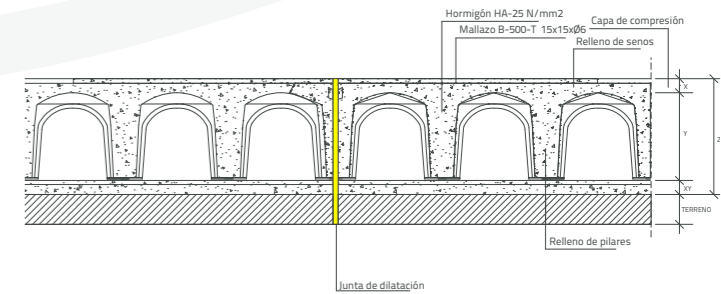
Detail encounter with pillars



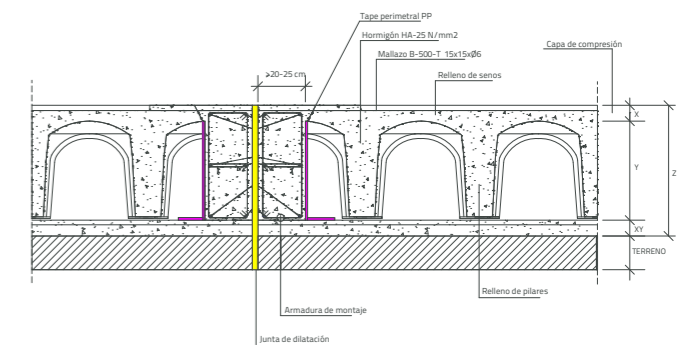
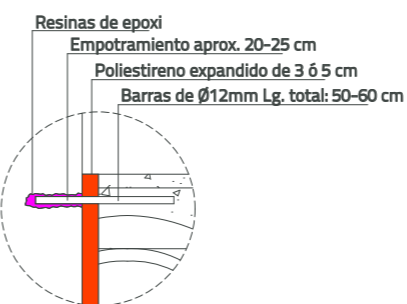
Detail of the connection of the structure to the perimeter walls



Top / Detail expansion joints based on whole piece



Bottom / Detail expansion joints based on the cut piece



The connection should be placed exact 0.50 or 0.75 each a function of caviti staking.

Completed Projects

Made with Caviti system

ANTIGUA FÁBRICA DE ARMAS

Toledo.
Models supplied: C-40.
Product Area: 2.500 m...
Uses: Sanitary floor.

GERIÁTRICO PIEDRABUENA

Ciudad Real.
Models supplied: C-25.
Product Area: 1.210 m...
Uses: Sanitary floor.

CAMPUS EMPRESARIAL

Guadalajara.
Models supplied: C-35.
Product Area: 2.529 m...
Uses: Sanitary floor.

APARCAMIENTO LA SALLE

Santiago de Compostela.
Models supplied: C-40.
Product Area: 4.391 m...
Uses: Damp-proof slab.

NUEVO AEROPUERTO DE BARCELONA

Barcelona.
Models supplied: C-5 a C-70.
Product Area: 140.000 m...
Uses: Screeds and Sanitary floor.

SEDE GERENCIA URBANISMO

Murcia.
Models supplied: C-10, C-20, C-25, C-70.
Product Area: 7.800, 4.310, 450, 6350 m...
Uses: Sanitary floor.

EDIFICIO OBRA TORRE AGBAR

Barcelona.
Models supplied: C-10, C-15.
Product Area: 4.100 m...
Uses: Damp-proof slab.

TORRE DEL AGUA

Zaragoza.
Models supplied: C-30.
Product Area: 3.800 m...
Uses: Sanitary floor.

EDIFICIO TORRE GAS NATURAL

Barcelona.
Models supplied: C-25.
Product Area: 6.650 m...
Uses: Screeds.

RA HOTELS

Tarragona.
Models supplied: C-40.
Product Area: 7.200 m...
Uses: Screeds.

HOTELES PORT AVENTURA

Tarragona.
Models supplied: C-70.
Product Area: 11.835 m...
Uses: Sanitary floor.

I.E.S. ALMUSAFES

Valencia.
Models supplied: C-40.
Product Area: 2.800 m...
Uses: Sanitary floor.

C. SUPERIOR BIOMÉDICO

Valencia.
Models supplied: C-25.
Product Area: 7.100 m...
Uses: Damp-proof slab.

PALACIO CONGRESOS DE MARBELLA

Málaga.
Models supplied: C-30.
Product Area: 2.810 m...
Uses: Screeds.

PLAZA PÚBLICA DOS HERMANAS

Sevilla.
Models supplied: C-40.
Product Area: 2.950 m...
Uses: Screeds.

HOSPITAL DE TOLEDO

Toledo.
Models supplied: C-50, C-55.
Product Area: 2.000 m...
Uses: Sanitary floor.

HOSPITAL DE RONDA

Málaga.
Models supplied: C-45.
Product Area: 2.200 m...
Uses: Sanitary floor.

HOSPITAL DE SALAMANCA

Salamanca.
Models supplied: C-5 A C-25.
Product Area: 2550 m...
Uses: Parking.

HOSPITAL DE MOTRIL

Granada.
Models supplied: C-30.
Product Area: 2.280 m...
Uses: Sanitary floor.

VIVIENDAS VALLEHERMOSO

Almería.
Models supplied: C-60.
Product Area: 4.812 m...
Uses: Sanitary floor.

PALACIO CONGRESOS ORENSE

Orense.
Models supplied: C-25.
Product Area: 3.110 m...
Uses: Sanitary floor.

CÁMARA FRIGORÍFICA

Coruña.
Models supplied: C-15.
Product Area: 2.880 m...
Uses: Cold storage.

VIVIENDAS VALLEHERMOSO

Coruña.
Models supplied: C-20.
Product Area: 9.000 m...
Uses: Sanitary floor.

PARKING URZAIR

Vigo.
Models supplied: C-10.
Product Area: 10.307 m...
Uses: Damp-proof slab.

AUDITORIO VIGO

Vigo.
Models supplied: C-15, C-25, C-30, C-35.
Product Area: 12.500 m...
Uses: Sanitary floor.

HOSPITAL XERAL LUGO

Lugo.
Models supplied: C-40.
Product Area: 30.000 m...
Uses: Sanitary floor.

NAVE TEX VIGO

Vigo.
Models supplied: C-20.
Product Area: 12.000 m...
Uses: Sanitary floor.

METROSUR (ESTACIONES)

Madrid.
Models supplied: C-10, C-20.
Product Area: 20.710 m...
Uses: Screeds.

EDIFICIO ENDESA

Madrid.
Models supplied: C-30.
Product Area: 6.800 m...
Uses: Sanitary floor.

HOTEL J. CAMARILLO

Madrid.
Models supplied: C-40.
Product Area: 7.307 m...
Uses: Sanitary floor.

CONSEJO SUPERIOR DEPORTES

Madrid.
Models supplied: C-30.
Product Area: 7.900 m...
Uses: Sanitary floor.

OFICINAS BSCH

Madrid.
Models supplied: C-30, C-35.
Product Area: 35.676 m...
Uses: Screeds and Sanitary floor.