

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ



وزعتی و محیطی امور و منابع طبیعی
دائرة، بیروت، لبنان.

25 دسامبر 2026

إقرار

أنا، **محمّد عليّ محمد عليّ**، مسؤول قسم البيئة في وزارة البيئة، أقرّ بموجب هذا القرار رقم (IUL)88-ENV/88/2026/67 الصادر في 25 دسامبر 2026:

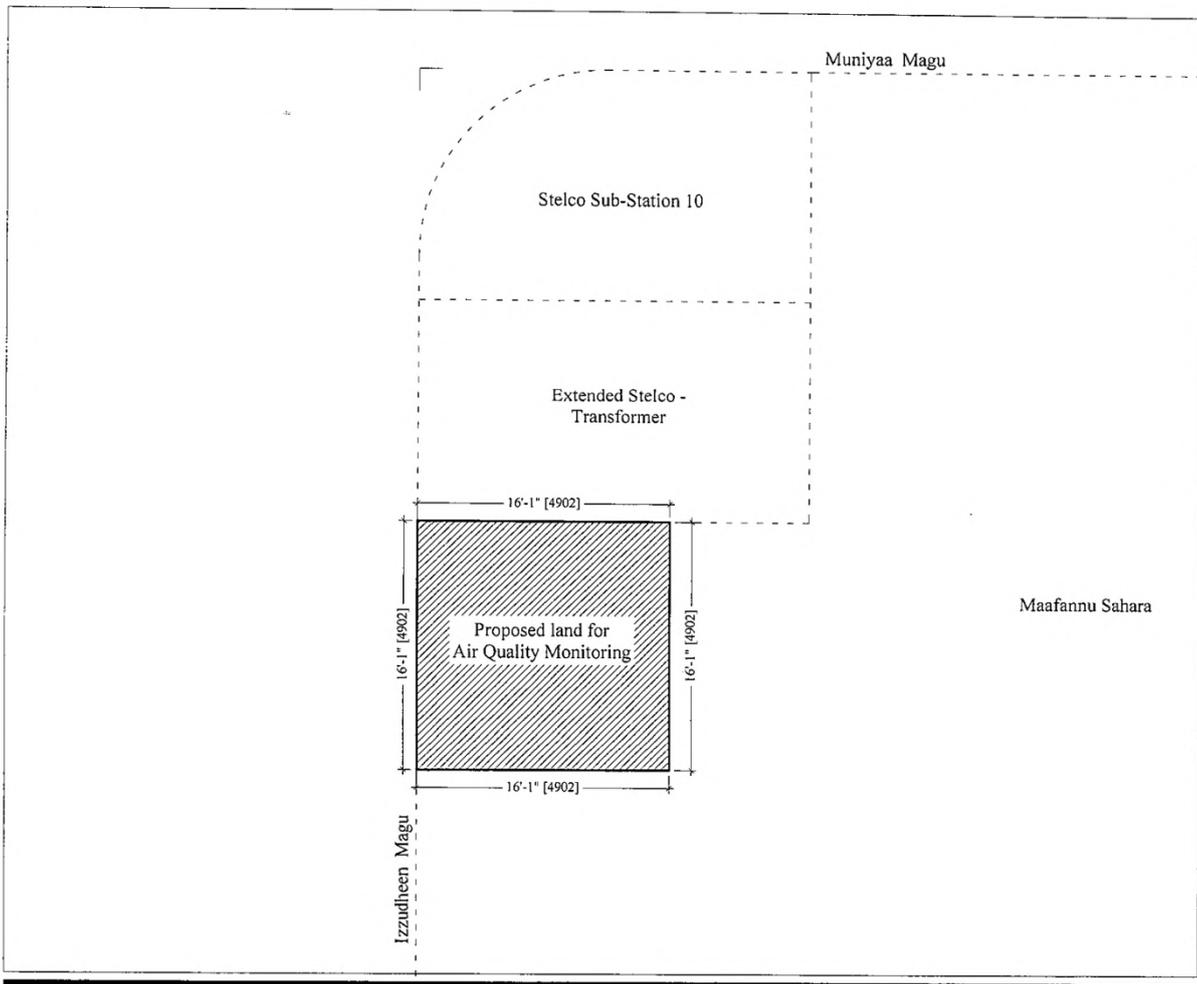
- 1) تسوية ملفّ ترخيص البناء رقم 313 في بلدية نابعلية في إطار مشروع تطوير المنطقة السكنية.
- 2) إصدار الموافقة على مشروع البناء رقم 313 في بلدية نابعلية وتسوية ملفّه في إطار مشروع تطوير المنطقة السكنية.
- 3) إصدار الموافقة على مشروع البناء رقم 313 في بلدية نابعلية وتسوية ملفّه في إطار مشروع تطوير المنطقة السكنية.

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ



مۆھۆبەتلىرىمىزنى قوغداش،
ساقلاش ۋە تەزىلەش.

دۆلەت ئامبارى ئورمان تەسۋىرى:



بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ



وزیرتو محیطہ صاف کاری، برقی و آب و ہوا
دہلی، برقی و آب و ہوا

وزیرتو محیطہ صاف کاری، برقی و آب و ہوا
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وزیرتو محیطہ صاف کاری، برقی و آب و ہوا

AQMS Specifications

Station Size:

- 3 x 2.4 x 2.7 m (width x height x depth)
= 10x8x9 ft

Location requirements:

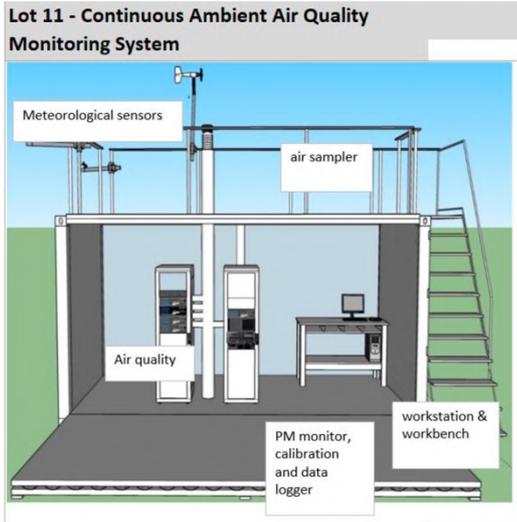
- 5.5 m wide and at least 3 m long (18x10 ft)
- sampling must be unrestricted in an arc of 270°
- the sample inlet must be several meters away from any building, balconies, trees



Station exterior:



Station interior view:



بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ



وَجَوَدٌ وَأَجْرٌ مَّا كُنْتُمْ تُعْمَلُونَ
عَلَيْكُمْ فَاعْبُدُوا اللَّهَ
فِي سُبُوحِ سَمَائِهِاتِ
وَعَلَى الْوُجُوهِ
الْأَرْضِ
وَعَلَى
الْأَشْجَارِ
وَعَلَى
الْحَيْوَاتِ
الْمَكْنُونِ
فِي حَقِّ
رَبِّكُمْ
لَعَلَّكُمْ
تَتَّقُونَ

سُبْحَانَ اللَّهِ عَمَّا يُشْرِكُونَ
اللَّهُ أَكْبَرُ عَمَّا يُشْرِكُونَ



CONTINUOUS AMBIENT AIR QUALITY MONITORING SYSTEM

26.10.2023

CLIENT	United Nations Development Programme Country Office Maldives
CONTRACT NO.	19065- AD10132
PROJECT	Air quality monitoring system and Services (LTA – GP600748).

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1. INTRODUCTION

In this document we are going to define the type of civil and electrical works necessary for the correct operation of an air quality cabin.

The project with UNDP includes the supply of the complete cabinet with the next measurements:

- NO, NO₂, NO_x and NH₃
- SO₂
- CO
- O₃
- PM_{2,5}
- PM₁₀
- CO₂
- Wind direction
- Wind speed
- Air temperature
- Air humidity
- Barometric pressure
- Solar radiation
- Sun Shine sensor
- Rain

The cabinet will have too the system to prepare the concentrations which permits calibrating the gas analyzers. The supply will include too the 2 years consumables by the instruments.

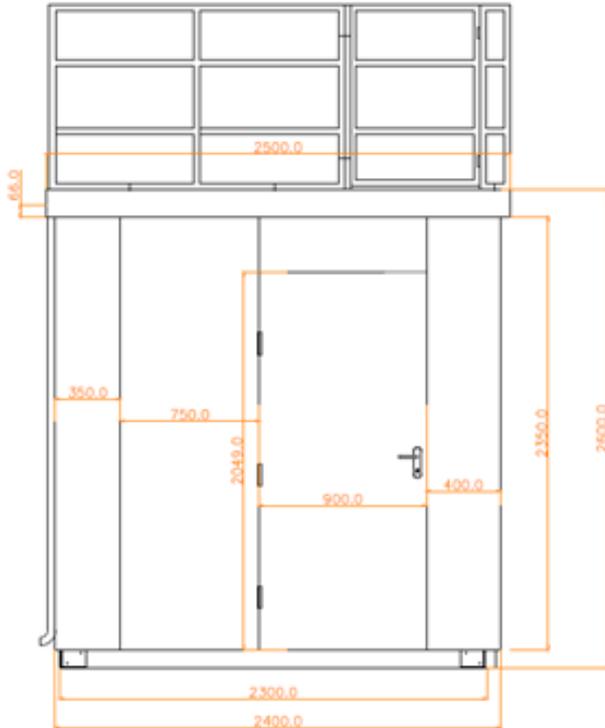
The cabinet will be made in galvanized steel, totally prepared to install permanently outdoor without any more protection. The sizes will be 3000x2400x2700mm and the roof will be used to mount the meteorological, particle and CO₂ measurements. The roof is accessible using a ladder fixed in the internal part of the door, and the roof has handrail to protect the workers. The wind has to be measured to 10 meters, with a telescopic mast, which permits to go up and down manually, and it permits to do the sensor maintenance in secure conditions.



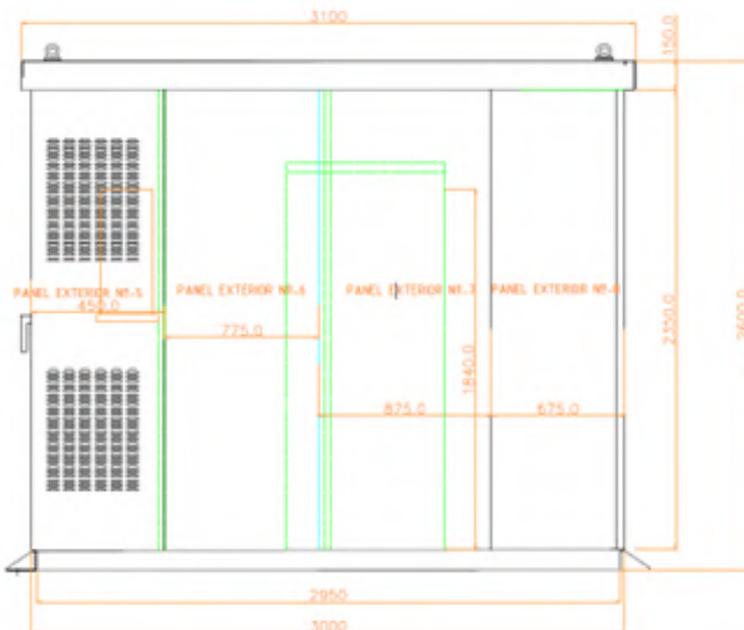
2. TECHNICAL DESCRIPTION

2.1 CIVIL WORKS .

Below we show the drawings of the booth so that you can see its size and interior layout:



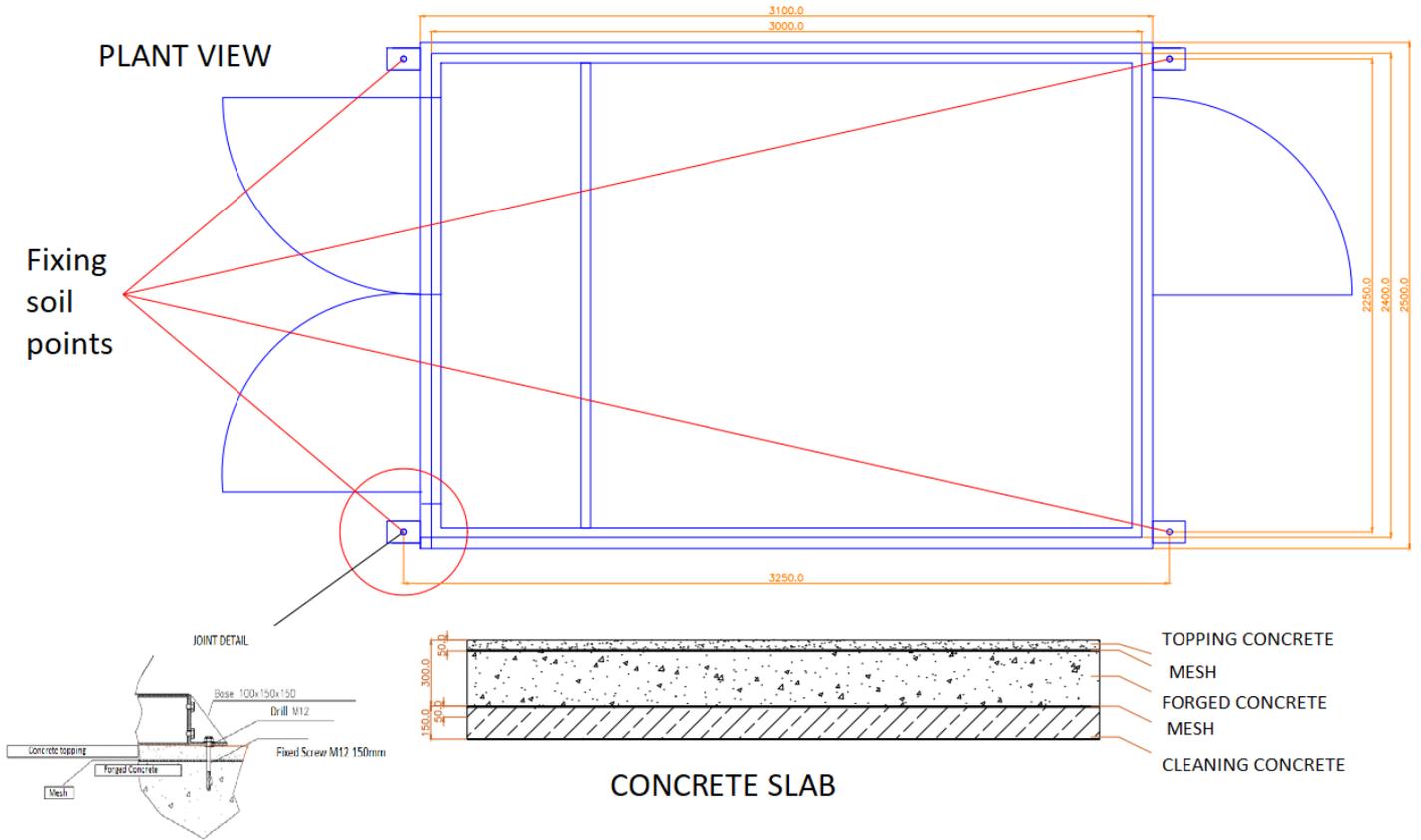
FRONTAL VIEW



ONE SIDE VIEW



The following recommendations are made for the correct seating of the cabinet in the measurement area, and to ensure its long-term horizontal stability, plant view:

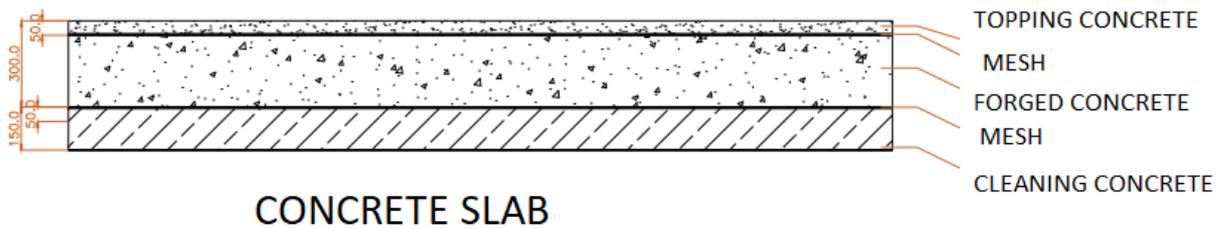




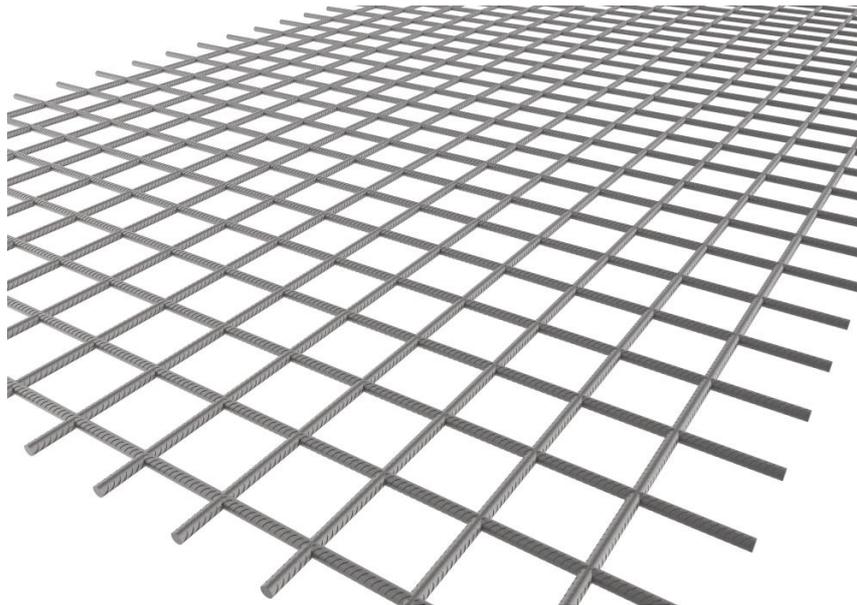
With the details of these cabin plans, we can describe that a reinforced concrete slab of 4000x5000mm is required, giving a margin of 1m to the cabin dimensions. It will be necessary to make a path to the slab, to facilitate the entry of the technicians and to carry the material for maintenance.



The concrete slab must be double reinforced with iron bars at the top and bottom, as indicated in the detail in this construction order:



- Hole in the ground of 4000 x 5000 x 400mm, with wood around to formwork the slab.
- 150mm of cleaning concrete: when the hole in the ground is finished, is necessary to create a first clean base to start with the next step.
- 1st Metal mesh: Is necessary to crate an iron mesh, with 400x400mm each side, for all the hole (4000 x 5000), with 8 or 10mm iron bars. Let the iron mesh up of the cleaning concrete.



- 300mm of concrete slab: Next we have to cover with 300mm of concrete.
- 2nd Metal mesh: Next, another mesh like the first one.
 - Is possible to join the meshes creating like a cube (4000x5000x300) with the two iron meshes, giving vertical bars to joint them, and then cover with 300mm of concrete directly.

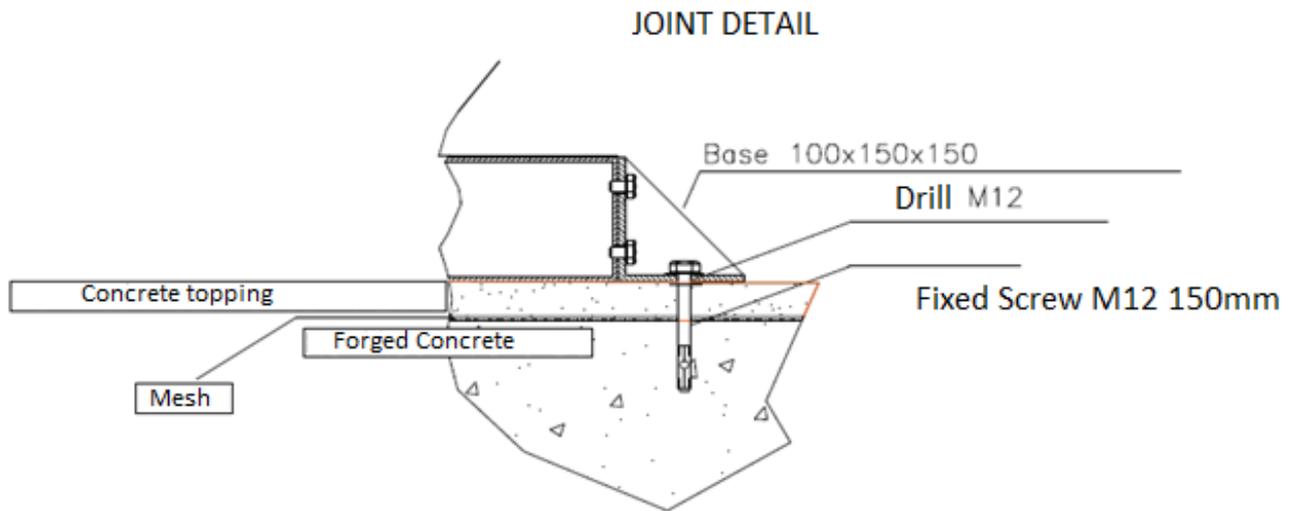


- 50mm of concrete topping: This finish part is the viewed part of the big concrete block in the ground. It has to be strong and straight in all sides, and the base must be as flat as possible, to install the cabinet in the correct way.





To attach the cabin to the concrete slab, 150mm security screws will be used directly on the slab, once the cabin is placed in the desired location. It will be necessary to use a drill to make the holes correctly, as indicated in the indicated plans. The installation Screws are provided by Adasa when the installation of the cabinet in the field starts.





2.2.- VOLTAGE REQUIREMENTS

The voltage requirements are 230 Vac, power 9.95 kW (max 11.9 kW), current 45A, here the voltage study:

ÍTEM N°	REV.	IDENTIFICACIÓN KKS	DESCRIPCIÓN	MÁXIMA POTENCIA PROCESO (kW)	POTENCIA NOMINAL (kW)	EFICIENCIA ELÉCTRICA	POTENCIA NOMINAL ELÉCTRICA (kW)	TIPO DE VOLTAJE	VOLTAJE (V)	FACTOR DE POTENCIA	CORRIENTE NOMINAL (A)	Ia/In	N° FASES	ORIGEN ALIMENTACIÓN
ALIMENTACIÓN SUMINISTRADA: 230VAC 1Ph+N+PE														
CABINA - 20CXA20 SEQUOPRO														
1		20CXA20AN001	AIRE ACONDICIONADO	3.5	2.9	95%	3.05	VAC	230	0.93	12.61	1.6	1	230VAC (F+N)
2		20CXA20AN002	AIRE ACONDICIONADO	3.5	2.9	95%	3.05	VAC	230	0.93	12.61	1.6	1	230VAC (F+N)
3		20CXA20	LUMINARIAS	0.18	0.15	100%	0.15	VAC	230	1	0.65	1	1	230VAC (F+N)
4		20CXA20CQ007	BOMBAS ANALIZADORES/ SISTEMA DE AIRE CERO	2.4	2	95%	2.11	VAC	230	0.96	8.70	1	1	230VAC (F+N)
5		20CXA20GR001	UPS	2.4	2	95%	2.11	VAC	230	0.99	8.70	1	1	230VAC (F+N)
6		20CXA20	POTENCIA TOTAL	11.9	9.95	95%	10.47	VAC	230	1	43.26	1.2	1	230VAC (F+N)

In the table which is presented above, you can see the standard power consumptions of the equipment which is installed inside the cabinet. In the DESCRIPTION (Descripción in Spanish) column, you can see the following equipment:

AIRE ACONDICIONADO = AIR CONDITIONING

LUMINARIAS = LIGHTNING

BOMBAS ANALIZADORES = ANALYZING PUMPS

UPS = UNINTERRUPTED POWER SYSTEM

POTENCIA TOTAL = TOTAL POWER

The information displayed in the columns which are at the right of the DESCRIPTION COLUMN are:

MAXIMA POTENCIA PROCESO: MAXIMUM PROCESSING POWER

NOMINAL POWER: POTENCIA NOMINAL

EFICIENCIA ELÉCTRICA: ELECTRIC EFFICIENCY

POTENCIA NOMINAL ELECTRUCA: ELECTRIC NOMINAL POWER

VOLTAJE= VOLTAJE

FACTOR DE POTENCIA = POWER FACTOR

CORRIENTE NOMINAL = NOMINAL CURRENT

The cable size has to be like 3x6mm, maximum 40 mm section, the length will be variable depending on the type of electrical commissary installation.

There are two options for powering the cabin, depending on the possibilities of the installation site.

The first is when we already have an **electricity distribution point available from a nearby electrical panel owned by the client**, which does not require an electricity meter. In this case, it will be necessary to make an electrical connection from that point to the centre of the concrete slab, in order to pass the cable from the electrical supply panel to the inside of the cabin and connect it to the terminals prepared for the internal electrical panel. In the distribution board where the cabin power supply cable is connected, it will be necessary to have some electrical protection such as fuses in each phase or a circuit breaker/differential to be able to cut the power supply, if necessary, in order to work safely at the other end.

The second option would be that **the customer's switch cabinet is not available and must be connected directly to the utility**.

In this case it is necessary to install a company's electricity switchboard, to be able to place the necessary disconnectors and fuses before the other electricity meter switchboard.





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In the following example, we show a complete installation carried out in Spain by Adasa, in which we installed the electrical control cabinet and the concrete slab.



In this case, as the cabin was smaller and lighter, the calculations allowed us to use 4 concrete cubes instead of a closed slab as your project.

As you can see, an electrical connection is made with a corrugated pipe (red one) from the switchboard to the inside of the concrete slab, so that the power cable can be passed through once the cabin has been installed and secured with the safety screws. This tube must have inside a guide to pass easy the electrical 3 wires cable.



3. MATERIAL LIST AND DESCRIPTION

1. Concrete SLAP :

- Iron Mesh 4000x5000 mm, 8 mm bars : 2 UNT
- Wood for the forged concret around the ground hole : 18 m
- 10 m3 of concrete
- Security fixed Screw M12 x 150mm : 4 UNT minimum

2. Electric connections :

- Wire section 40mm, 3x6mm (fase, neutral, ground), length depending distance from electrical connection point.
- Corrugated Pipe 100-120mm. Lenght : the same has de electrical wire. With a guide indside.

3. Electrical connection point :

- a. **First Option** : electrical security connections :
 - i. circuit breaker and differential for 60A of current and 230 V in the side where the wire have to be connected.
- b. **Second Option** :
 - i. Electrical cabinet with electical protections, one fuse for every fase (3 UNT)
 - ii. Electrical cabinet for electricity meter.
 - iii. Monolith of work to locate the cabinets
 - iv. Tube corrugated connections In (from electricity company) and out (to Adasa cabinet)