

INSTALLATION MANUAL

Safe cellar shelter

130x160



The safe cellar shelter in section: three shelf levels, room for 2–3 people

1. Intended use and product description

The safe shelter is intended for storing food supplies and can also be fitted out as a protected place for 2–3 people to stay in for a short time.

The safe cellar shelter is made of virgin polyethylene approved for contact with food. Inside it is reinforced with a sturdy steel frame and has three shelf levels. The bottom level is fixed and carries the weight of three people. The two upper levels fold away and can be folded up on one or on both sides as required.

The safe cellar shelter comes with a sturdy steel door made of 3 mm plate, LED lighting, an air supply fan with speed control and a rechargeable torch.

Main dimensions

Item	Value
Overall size of the body with ribs	130 × 160 cm
Total height including the neck	200 cm
Height of the neck	40 cm + 5 cm slope
Clear opening of the neck	65 × 85 cm
Outside size of the neck	70 × 90 cm
Body material	virgin polyethylene, food grade
Door (lid)	steel 3 mm
Weight of the product	400 kg

Actual dimensions may differ from those shown on the drawing by ±3 % due to shrinkage of the polyethylene.

Protection category S-0

This manual describes the standard installation of the product as a cellar.

To obtain a shelter meeting category S-0 you must have an engineer calculate the concreting parameters and use a special steel lid.

2. Scope of delivery

- Ventilation pipe — 2
- Rechargeable torch — 2
- Solar panel — 2
- Folding telescopic ladder — 1

Not included in the delivery

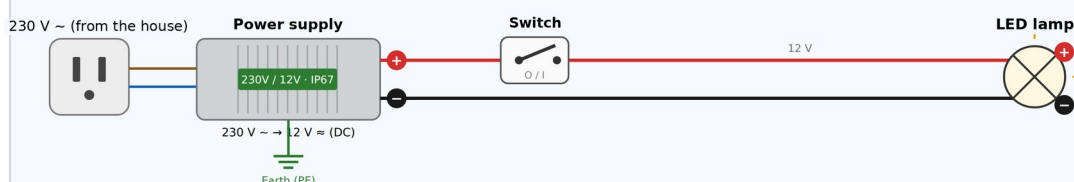
The materials for concreting (concrete, reinforcement, insulation), fixings, cable and the conduit for it are purchased separately. The quantities are given in section 4.

3. Electrical equipment

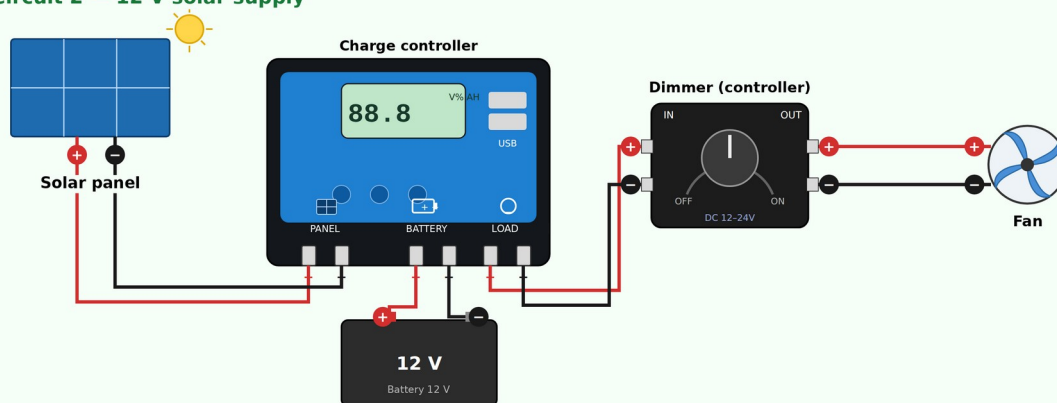
The cellar shelter is supplied with LED lighting, an air supply fan with speed control, a battery and a rechargeable torch. The electrical installation consists of two independent circuits: the LED lighting is fed from the 230 V mains through a 230 V / 12 V power supply, and the fan from the solar panel through a charge controller, a 12 V battery and a dimmer speed controller.

ELECTRICAL SCHEMATIC OF THE CELLAR

Circuit 1 — 230 V mains supply (earthed)



Circuit 2 — 12 V solar supply



ALWAYS OBSERVE THE POLARITY (+ and -)

Red wire — plus (+), black wire — minus (-)

Electrical schematic of the cellar

Cable entry into the body

The electrical cable is connected to the body through a polyethylene pipe of 32 mm diameter welded into the body specially for this purpose.

It is recommended to run the cable from the power source and the solar panel to the body inside a polyethylene pipe of 20 or 32 mm diameter. The pipe protects the cable from damage during concreting and backfilling and allows it to be replaced later without digging.

- Pull the cable through before concreting, leaving at least 1 m of slack at each end.
- Once the cable is in place, seal the entry.
- Always observe the polarity: red wire — plus (+), black — minus (-).
- Carry out all work with the power source switched off.

Important

Fit the solar panel only after the earthworks are finished, so that it is not damaged by machinery.

4. Installation and materials required

The product is set into an excavation pit and concreted in. Two versions are possible — decide which one before buying materials.

4.1. Two versions

	Standard installation	Increased strength (shelter)
Concrete	Dry concrete mix, placed in layers and soaked with water	Ready-mixed concrete from the plant
Concrete class	Not specified	Base slab and top slab C25/30, walls C20/25
Reinforcement mesh of the top slab	At a distance of 4–5 cm from the body	At a distance of 4–5 cm from the body
Lid	Standard, steel 3 mm	Reinforced steel lid
Intended use	Cellar for storing food	Category S-0 shelter after an engineer's calculation

4.2. Materials required

The quantities are for one 130 × 160 cellar with an outside size of the concrete surround of 220 × 190 cm.

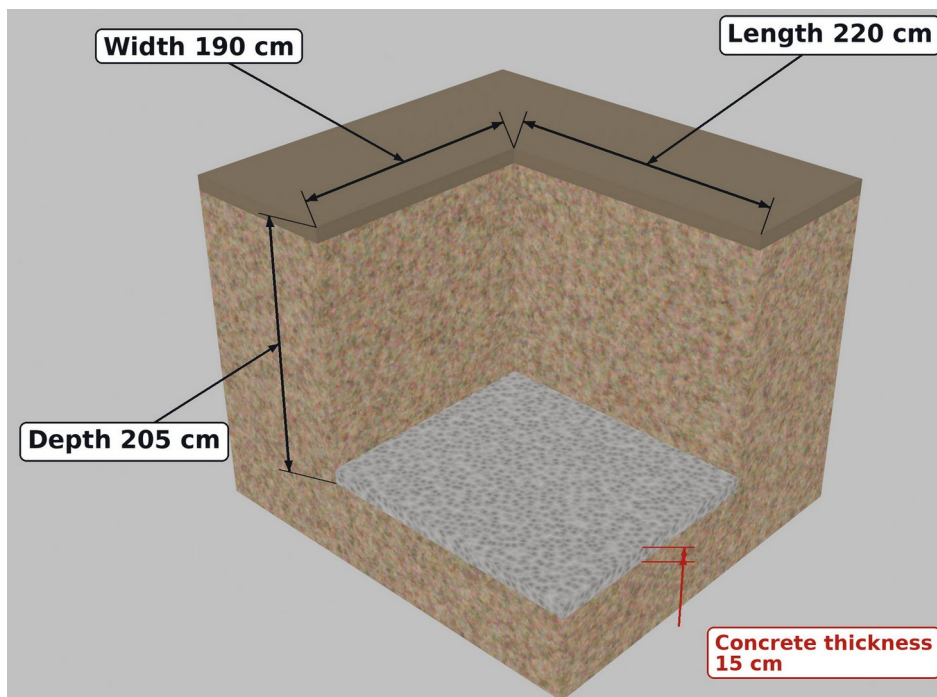
Material	Standard installation	Increased strength
Concrete, total	5.2 m ³ of dry mix	5.5 m ³ of ready-mixed concrete
of which base slab 15 cm	0.7 m ³	0.7 m ³ — C25/30
of which walls 20 / 30 cm	2.9 m ³	2.9 m ³ — C20/25
of which top slab and top layer	1.3 m ³	1.3 m ³ — C25/30
Ø12 rebar, total length	252 m	252 m
the same, weight	224 kg	224 kg
the same, bars of 6 m	43 pcs	43 pcs
Tying wire Ø1.2 mm	4 kg	4 kg
Spacers for 40 mm cover	—	60 pcs
XPS 100 mm, sheet 0.60 × 1.20 m	10 sheets	10 sheets
XPS 30–40 mm (neck / lid frame)	2 sheets	2 sheets

4.3. What you will need on site

- Two or three people. The installation cannot be carried out single-handed.
- An excavator for the pit and for lowering the body.
- Shovels, a tamper, a spirit level at least 1.5 m long, a 5 m tape measure.
- A tying hook for the reinforcement, an angle grinder with a metal cutting disc for the bars.
- A knife for the insulation, expanding foam or adhesive for XPS.
- A hose with water: for soaking the dry concrete and for curing the ready-mixed concrete.

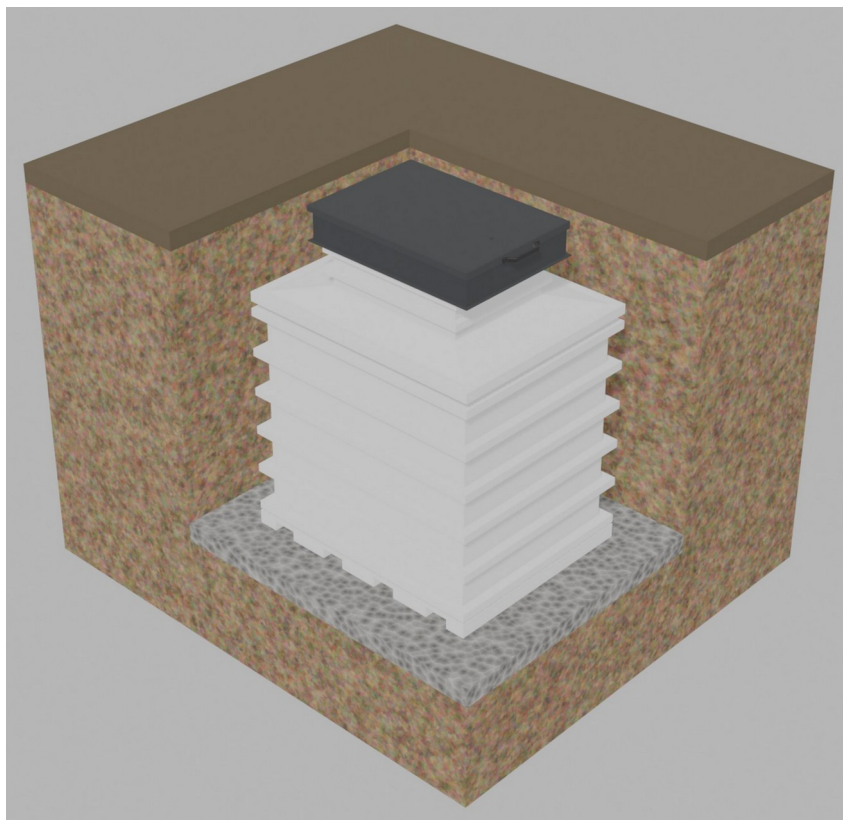
Safety

Do not climb into a pit deeper than 1.5 m without shored walls or battered sides.
 Do not stand under the raised body or in the pit while it is being lowered.
 Keep the lid closed, or cover the opening with a board, until the work is completely finished.

4.4. Installation steps**Step 1. Pit and concrete base slab**

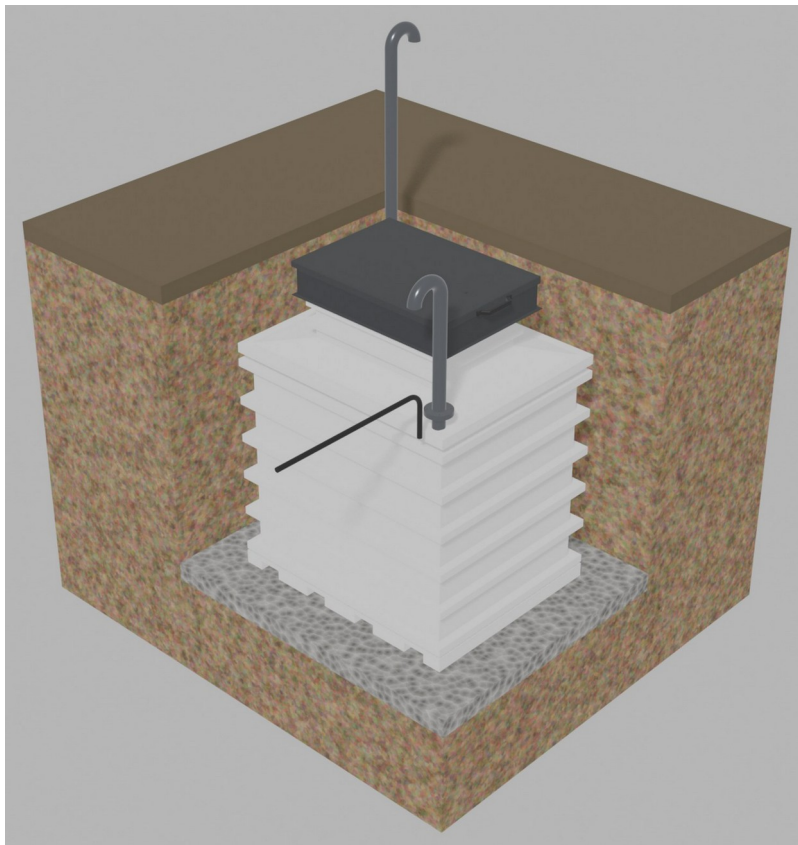
- Set out a rectangle of 220 × 190 cm on the plot — this is the outside size of the future concrete base. Check that the diagonals are equal.
- Excavate the pit layer by layer to a depth of 205 cm below ground level. Keep the walls vertical; in loose or wet ground allow for battered sides and increase the size of the pit.
- Level and compact the bottom, and check it in two directions with the spirit level. In weak or wet ground dig the pit 10 cm deeper, add 10 cm of crushed stone and compact it.
- Keep the excavated soil at least 1 m away from the edge of the pit — otherwise the walls will collapse.
- At the bottom of the pit cast a 15 cm thick slab over the whole area of 220 × 190 cm.
- At mid-depth of the slab lay a Ø12 reinforcement mesh at 200 × 200 mm centres. Tie the bars with wire at every other intersection.
- Level the surface of the slab — the body will stand on it, and it determines whether the cellar sits true.

Step 2. Setting the body



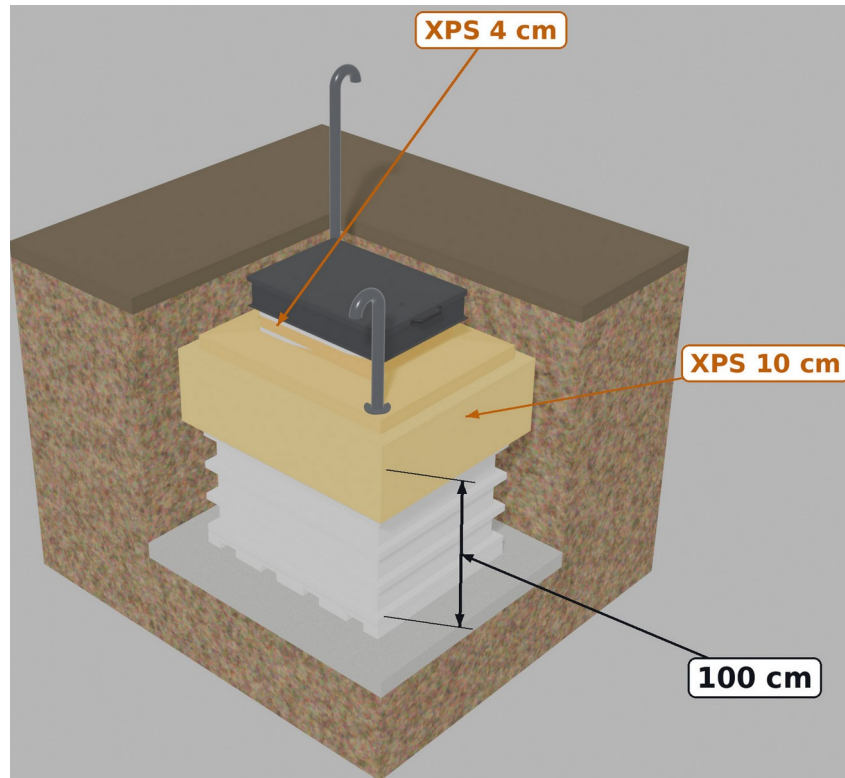
- Lower the body onto the slab. Do not drag the body along the ground.
- Centre the body so that the gap to the edge of the slab is the same all round: 30 cm along the long sides and 30 cm at the ends.
- Check the level along the ribs of the body in two directions. If necessary adjust it by packing under the slab before the walls are concreted.

Step 3. Fitting the ventilation pipes and connecting the electrical cable



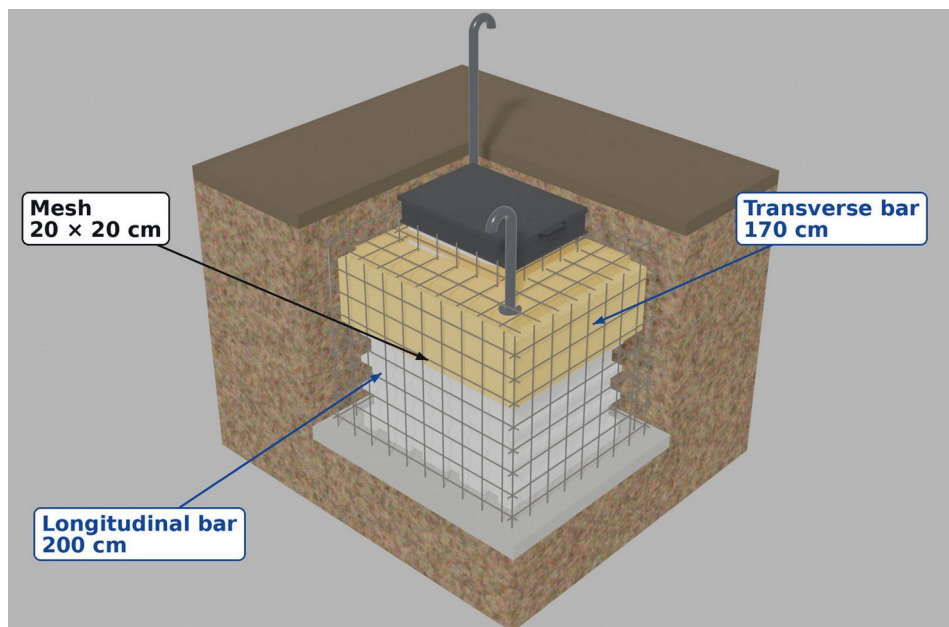
- Fit the two Ø76 mm ventilation pipes. The short pipe, 0.8 m high, goes at the front left corner, and the tall 1.5 m pipe at the rear right corner, behind the lid.
- The flanged coupling sits on the pipe about 10–15 cm from the body — it allows the pipe to be removed for servicing.
- Turn the bend of the short pipe away from the lid so that it does not obstruct the entrance.
- The electrical cable is connected to the body through a polyethylene pipe of 32 mm diameter welded into the body specially for this purpose. Run the cable from the power source and the solar panel to the body inside a polyethylene pipe of 20 or 32 mm diameter.
- Pull the cable through before concreting and seal the entry.

Step 4. Insulation



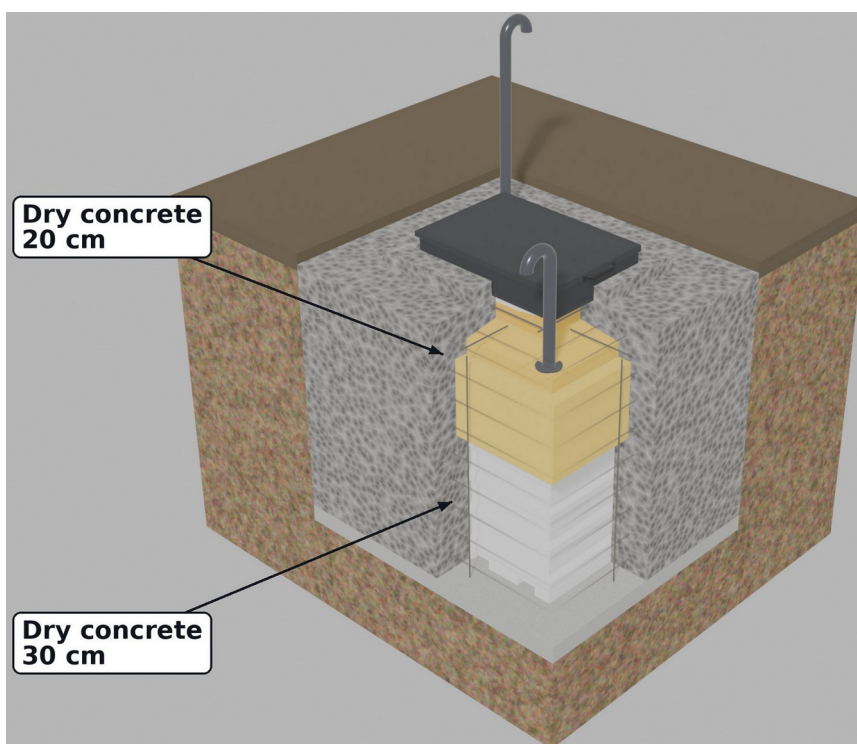
- XPS insulation 100 mm thick is laid on the walls and the transition, starting 100 cm above the floor of the cellar. Below that level no insulation is needed.
- A 30–40 mm thick board is inserted between the neck and the lid frame.
- Cut the 0.60 × 1.20 m sheets with a knife and fit them tightly, without gaps; fix them temporarily with adhesive or expanding foam so that they do not shift during concreting.
- Start on the side away from you and finish on the near side — it is easier to work that way.

Step 5. Reinforcement mesh



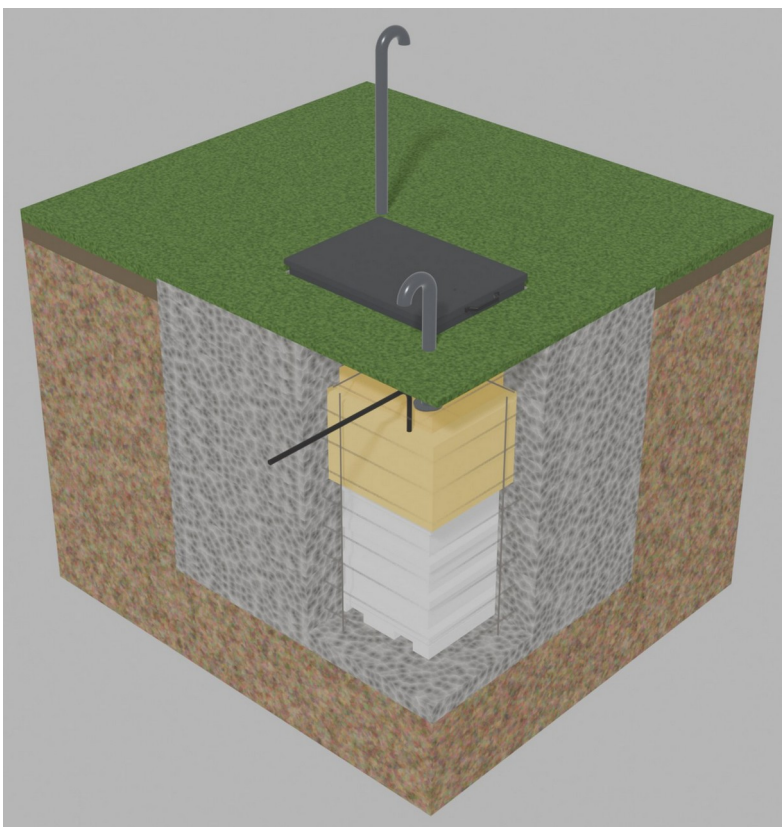
- Set up a mesh of Ø12 rebar at 200 × 200 mm centres around the cellar.
- The mesh stands 50 mm clear of the insulation surface. The bars run straight, without bending; at the corners adjacent bars overlap by about 50 mm.
- The tops of the vertical bars stop 50 mm below the concrete surface.
- Around the opening of the neck add two extra bars on each side.

Step 6. Concreting



- Standard installation: place the dry concrete mix in layers no thicker than 40 cm and soak each layer with water. Do not fill everything at once — the lower layers will not be wetted through.
- Increased strength: place the ready-mixed concrete in layers and compact it. The first layer of concrete must be as thin as possible to prevent concrete flowing under the body and floating it. Each further layer may only be poured once the previous one has set, and not less than one day later. Use C25/30 for the base slab and the top slab, and C20/25 for the walls.
- The concrete layer is 20 cm thick where there is insulation, and 30 cm in the lower part where there is none.
- The top surface and the neck are also covered with a 20 cm layer. The lower half of the lid frame must end up inside the concrete.
- Make sure the body does not float or shift: concrete evenly around the perimeter.

Step 7. Backfilling and landscaping



- Backfill the working space of the pit with soil and compact it in layers.
- Lay turf right up to the lid. The layer of concrete around the lid is covered with grass as well — from outside only the hatch and the two ventilation pipes can be seen.
- Fit the solar panel, connect the electrical equipment and check that the lighting and the fan work.
- Extend the telescopic ladder and make sure the descent is comfortable and safe.

What must not be done

The body must not be set straight onto the ground without a concrete slab.

The concrete must not be placed in layers thicker than 40 cm or without soaking with water.

5. Warranty terms

During the warranty period the buyer is entitled to free repair of the product in the event of manufacturing defects.

The warranty covers the operation of the fittings, the quality of the food-contact material, the floor and the shelves, the mechanical joints and the welds.

The manufacturer's warranty is limited solely to manufacturing defects and does not cover the following cases:

- Normal wear of all parts and components, natural ageing, and damage to paint and surfaces caused by ordinary use and by the environment, including corrosive substances, industrial pollution, chemicals, plant saps, stones, salt and the like.
- Minor geometric deviations that do not affect the quality of the plastic cellar and its parts (for example small departures from the design dimensions given in this product data sheet, arising from the nature of rotational moulding).
- Damage caused by natural disasters, fire, domestic factors and other force majeure circumstances.

- Damage caused by third parties, including during delivery or installation of the product carried out contrary to the installation manual of the plastic cellar.
- Damage and deformation of the product caused by changes in geometric dimensions that occur after the installation work is completed and follow from the design of the product.
- Corrosion caused by scratches and damage to the paint coating of the frame and of various parts and joints.

The warranty is void if the product has been repaired or altered by persons (companies) without prior consultation with the manufacturer.

Item	Value
Warranty period	24 months
Weather station, LED lighting	1 year
Expected service life	not less than 50 years

Keep this manual

A warranty claim will require proof that the installation was carried out in accordance with this manual. Take photographs at the stages of setting the body, reinforcing and concreting, and keep them.

Manufacturer of the product

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