



## Technical Datasheet

Cellar 200x480

Natural Fridge®



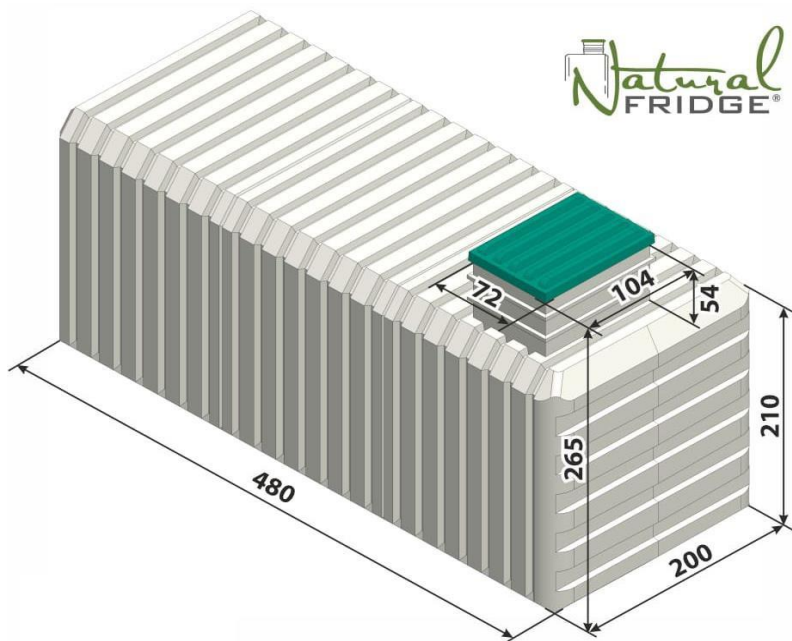


This card contains a description of the basic technical features of the Cellar 200x480 Natural Fridge made of plastic with a top entrance, as well as the method of installation and use.

Plastic cellars are intended for storing vegetables, fruits, liquids, beverages, and various types of food in packaging. The cellar is delivered ready to be embedded in the ground. The cellar is made of food-grade polyethylene as a monolithic structure in the rotomoulding technology. It does not require additional sealing.

**ATTENTION!**

Installation of the Cellar 200x480 Natural Fridge is only permitted at low groundwater levels.  
(not higher than 1.7 m above the ground surface).



Dimensions 200x480 cm,  
Height 265 cm,  
Volume 17.5 m<sup>3</sup>,

Weight 1800 kg,  
Entrance dimensions  
70x100 cm,  
Shelf width 18-35 cm, Shelf  
area 13.1 m<sup>2</sup>

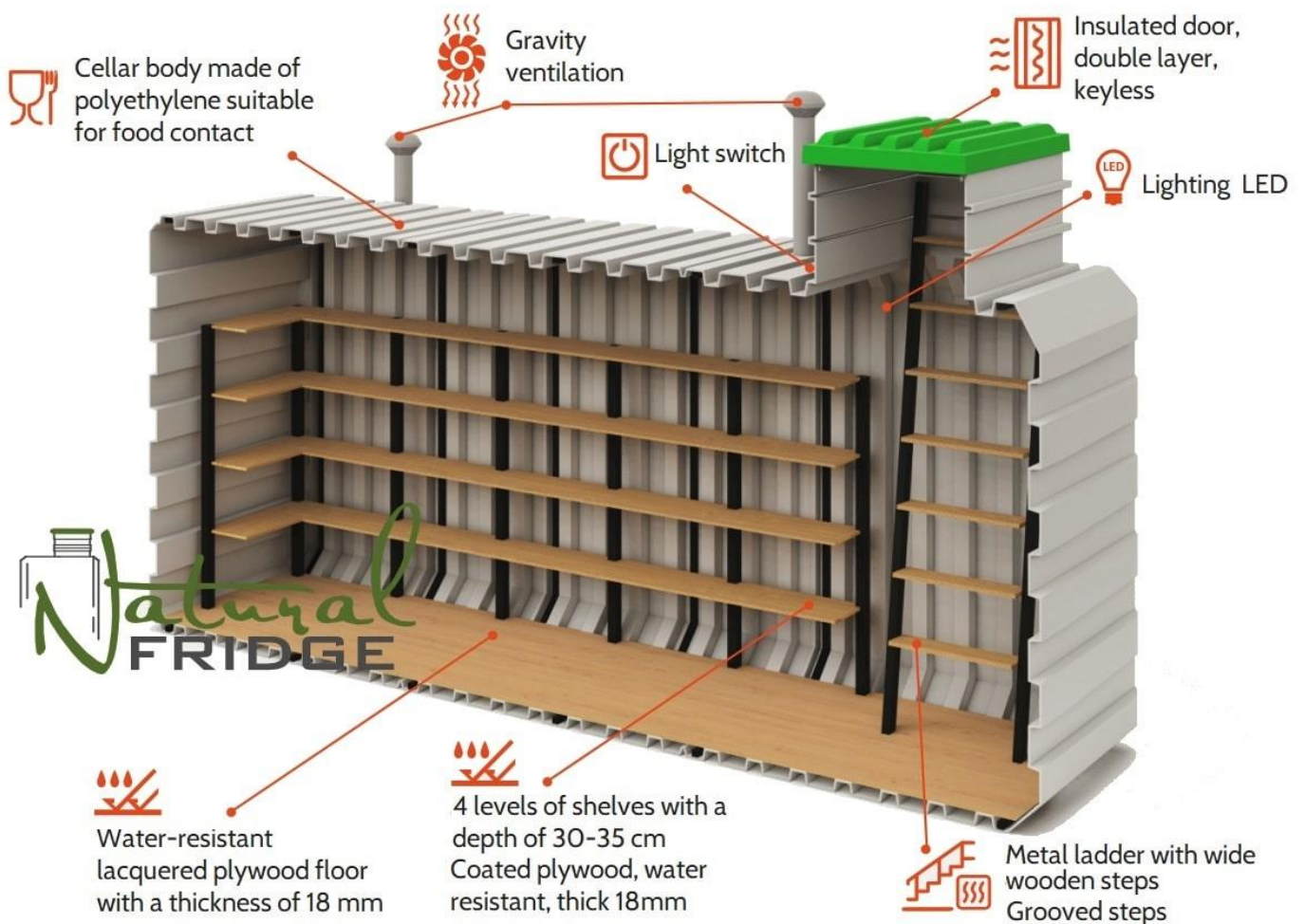
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Dimensions may vary by ±3% due to different shrinkage of polyethylene.

# Equipment

## Interior Equipment:

1. Shelves made of waterproof plywood - 4 rows
2. Floor made of waterproof plywood
3. Stairs - 1 pcs
4. Supply ventilation - 1 pcs
5. Exhaust ventilation - 1 pcs
6. Double cover (hatch) - 1 pcs
7. LED lighting - 1 pcs,
8. Weather station - 1 pcs.





## Assembly and operation manual

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The body of the cellar is made of food-grade polyethylene reinforced with ribbing. Inside the cellar, a strong steel frame is installed, which also serves as reinforcing ribbing. The object does not require additional sealing and protection against corrosion.

The lower part of the cellar must be buried at a depth of about 250 cm below the ground surface. At such a depth, very large soil pressure forces act on the cellar body. These forces can be even higher in the case of high groundwater levels or in the case of clay soils, which may move during freezing. Therefore, the installation of the cellar must be carried out in accordance with these instructions. Thanks to this, the aesthetic and practical cellar will serve for many years.

**Before starting the installation of the cellar, it is necessary to determine the groundwater level and the type of soil on site.**

### Required materials

Materials needed for the assembly of the cellar 200x480:

- Ready mix of semi-dry (dry) concrete B15-B25, 8 m<sup>3</sup>.
- Reinforcement bars 10-12 mm, 100 linear meters.
- Styrofoam for foundation insulation with a thickness of 5 cm - 45 sheets.
- Underground cable 2x6mm<sup>2</sup> or 2x4mm<sup>2</sup> - from the earth cellar to the connection point (220V).
- It is recommended to use a polyethylene pipe with a diameter of 20 mm for the underground cable.
- Synthetic straps with a permissible load of 5 tons and a length of 7 m - 3 pieces or steel cables with a polymer coating with a minimum diameter of 12 mm and a minimum length of 7 m - 3 pieces.

### Excavation dimensions

The dimensions of the excavation for the cellar installation should be 20 cm larger than its width and length around the entire perimeter - at least 240 x 520 cm at the bottom part. The depth of the excavation should be 265-270 cm, so that after

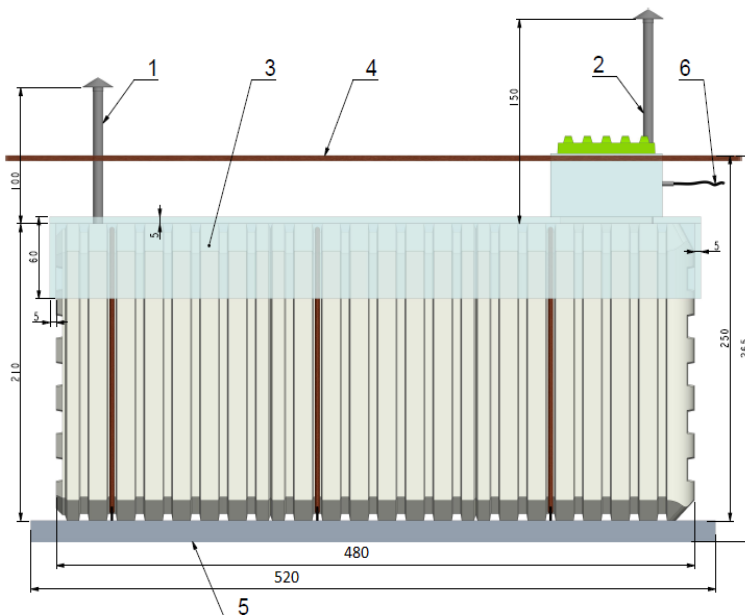


placing the cellar on a concrete slab or dry concrete base, the lower edge of the hatch cover is 5-10 cm above the ground level. This is to prevent rainwater or meltwater from getting inside the cellar. The walls of the excavation should be vertical and maintain the correct dimensions throughout their height. This will greatly facilitate the construction of cellar walls with dry concrete.

## Installation

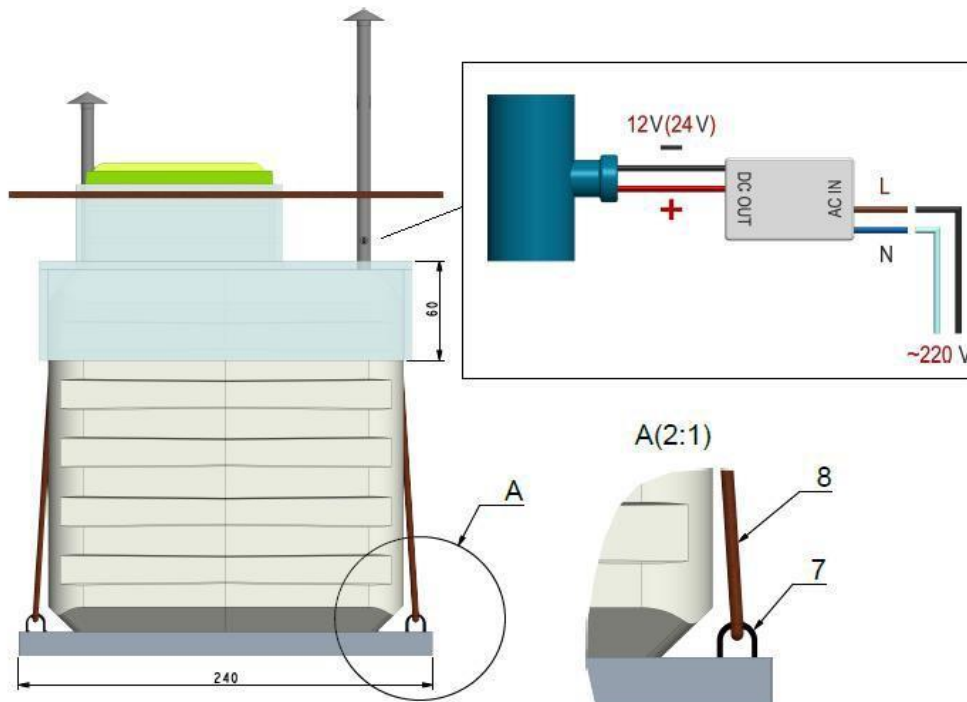
**WARNING! During the installation of the Natural Fridge cellar with a vertical entrance, it is necessary to provide drainage around the cellar in the excavation to prevent deformation or displacement by groundwater. For drainage, it is best to use drainage pipes laid on a layer of coarse sand, gravel, or small stones. The installed drainage pipes should be connected to an inspection chamber. The bottom part of the inspection chamber should be installed no higher than the bottom part of the cellar. An automatic submersible pump should be installed in the inspection chamber, which will continuously remove water.**

In sandy soils and at a low groundwater level (at least 2.5 m below the surface), it is permissible to install the cellar on a layer of dry concrete 10-15 cm high with reinforcement. In clay soils or at a high groundwater level, a reinforced concrete slab of at least 240 x 520 cm and 15 cm thick, containing handles for straps, should be made at the bottom of the excavation.



## Diagram

1. Fresh air ventilation pipe
2. Exhaust air ventilation pipe
3. Styrofoam insulation
4. Ground level
5. Concrete slab
6. LED power cable
7. Strap holders
8. Straps



We place the cellar on a previously poured concrete slab at the bottom of the excavation and secure it with straps (not included in the equipment). The cellar should be centered on the concrete slab. Then, we secure it to the slab with straps or rope and surround it with dry concrete on all sides. Each layer, 30-40 cm in height, should be moistened with water to allow the dry concrete to harden faster. The body of the cellar should be surrounded by dry concrete up to a height of 1 m from the bottom. Then, the cellar is covered with sand.

The thickness of dry concrete around each basement wall should be at least 20 cm.

### Installation of the top part

To reduce temperature fluctuations inside the cellar, it is recommended to use thermal insulation material (extruded polystyrene - foam board) with a thickness of 5-10 cm (Styrodur or similar) on the top part of the cellar (side surfaces of the vertical entrance and the top surface of the cellar body), as well as around the chimney and the side surfaces of the cellar body to a depth of 60 cm from the top plane of the cellar body. The thermal insulation should be covered with geotextile.

Ventilation pipes must be extended by 50 cm above ground level for the inlet air (which supplies air to the lower part of the cellar) and 100-150 cm for the exhaust air pipe (removes air from the upper part of the cellar) and equipped with ventilation caps (they are included in the cellar set).

In winter, at very low temperatures (below  $-20\text{ }^{\circ}\text{C}$ ) and in summer during heat waves (above  $+30\text{ }^{\circ}\text{C}$ ), it is necessary to limit the flow of cold and warm air (close the



air supply). It is also recommended to insulate the exhaust pipe (to avoid condensation in the pipe).

### **Attention**

When backfilling the cellar body with soil, it is forbidden to use construction machinery within a distance of less than 1 m from the body. Vehicle movement within a distance of less than 1 m from the cellar along its entire perimeter is prohibited.

Within a few weeks after installation, the polyethylene walls of the cellar will be pressed against the frame and shelves of the cellar by the pressure of the soil, and at greater distances between the frame elements, the walls may slightly bend inwards. In case of large temperature differences, some condensation may appear on the entrance doors or walls. The condensation evaporates after some time and does not need to be specifically removed. At very low temperatures, frost may appear on the inside of the entrance flap. If this phenomenon occurs frequently, it is recommended to insulate the door from the inside with insulating foam.

## **Warranty Conditions**

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During the warranty period, the purchaser has the right to free repair of the product in case of defects resulting from manufacturing errors.

The warranty covers the functionality of the equipment, the quality of the food material, floors and shelves, mechanical and welded connections.

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

- Normal wear and tear of all parts and components, natural aging, as well as damage to paint and surfaces caused by normal use and environmental influences, including aggressive substances such as atmospheric conditions, industrial pollution, chemicals, plant juices, stones, salt, etc.
- Minor geometric deviations that do not affect the quality of plastic cellars or their components (e.g., slight deviation from the structural dimensions specified in this product passport, due to the characteristics of the rotational molding process).
- Damage caused by natural disasters, fires, household factors, and other force



majeure.

- Damage caused by third parties, including during delivery or installation of the product, which violated the installation instructions for the plastic cellar.
- Damage and deformations of products caused by changes in geometric dimensions, which occur after the completion of installation works, as well as due to the design of the product.
- In case of corrosion caused by scratches and paint chips on frames as well as various parts and connections.

The warranty becomes void if the product has been repaired or attempted to be repaired by persons (companies) without prior consultation with the manufacturer.

**Warranty period: 24 months.**

Warranty for individual components (weather station, LED lighting) is 1 year.

Expected lifespan: at least 50 years.

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#### Product Manufacturer

BPR-PLASTECH LIMITED LIABILITY COMPANY

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