



## Technical Datasheet for the Cellar 150x150 Natural Fridge®





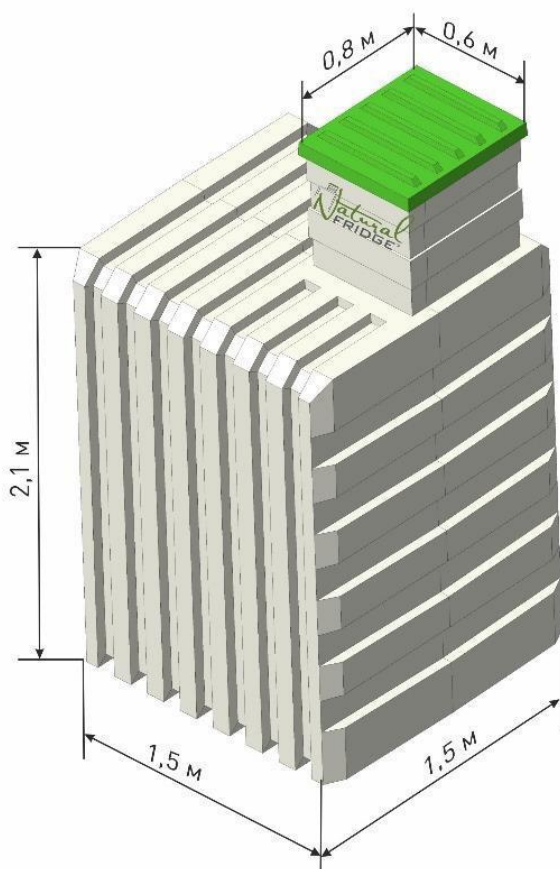
This card contains a description of the basic technical characteristics of the Cellar 150x150 Natural Fridge made of plastic with a top entrance, as well as the method of assembly and use.

Plastic cellars are designed for storing vegetables, fruits, liquids, beverages, and various types of packaged food. 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 rotomolding technology. It does not require additional sealing.

### ATTENTION!

The installation of the 150x150 cellar is permissible only at a low groundwater level

(not higher than 1.7 m from the surface of the ground).



Dimensions 150x150 cm Height

255 cm

Volume 4 m<sup>3</sup>

Weight 420 kg

Entrance dimensions 60 x 80 cm

Shelf width 11-30 cm

Shelf area 3.9 m<sup>2</sup>

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Dimensions may vary by  $\pm 3\%$  due to different shrinkage of polyethylene.

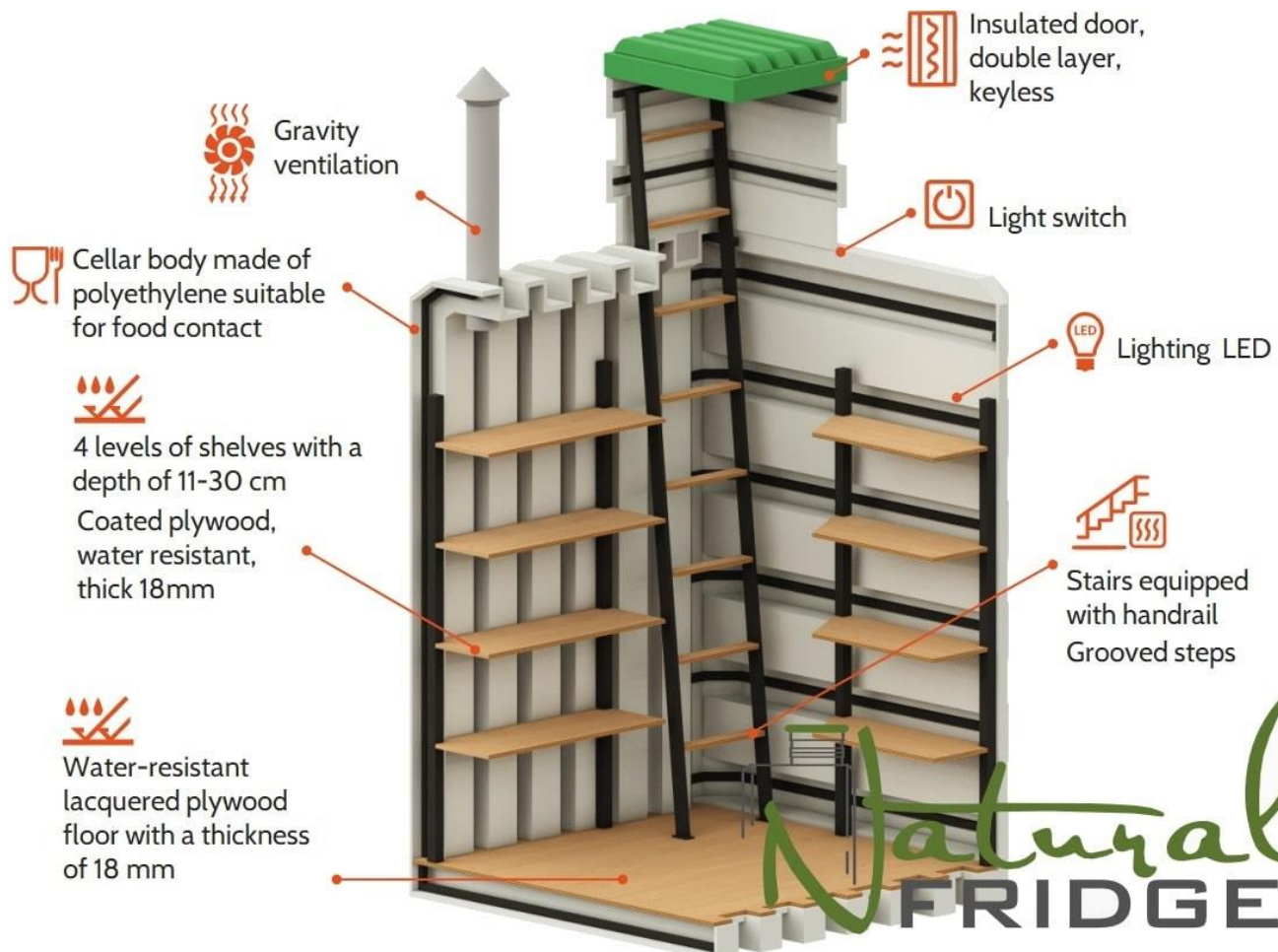
# Equipment

## Interior equipment:

1. Shelves made of waterproof plywood - 4 rows
2. Floor made of waterproof plywood
3. Stairs - 1 piece
4. Supply air vent - 1 piece
5. Exhaust air vent - 1 piece
6. Double cover (flap) - 1 piece

## Additional equipment:

1. LED Lighting - 1 pcs
2. Weather Station - 1 pcs





## Assembly and Use Instructions

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

The lower part of the cellar should be buried at a depth of about 250 cm below the ground surface. At such 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

- Ready mix of semi-dry (dry) concrete B15-B25, 4-6 m<sup>3</sup>
- Reinforcement bars 10-12 mm, 25 m
- Styrofoam for foundation insulation with a thickness of 5 cm - 12-14 sheets
- Underground cable 2x2.5mm<sup>2</sup> or 2x4mm<sup>2</sup> - from the cellar to the power connection 12V.
- It is recommended to use a 20mm polyethylene pipe for the underground cable.
- Synthetic straps with a permissible load of 4t and a length of 7 m - 2 pcs or steel cable wrapped with a minimum diameter of 10 mm and a minimum length of 7 m - 2 pcs.

### Excavation dimensions

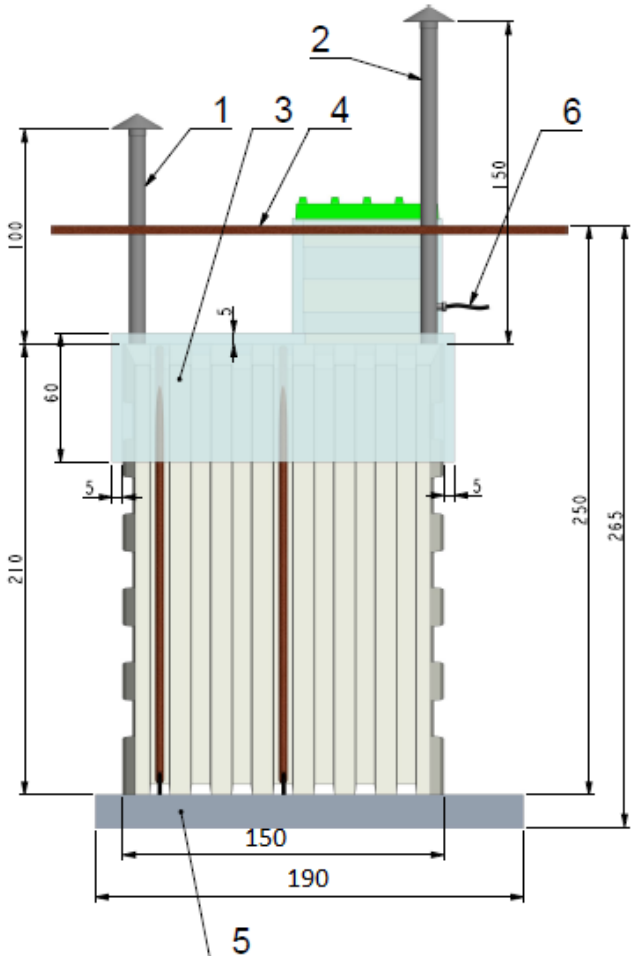
The dimensions of the excavation for the cellar installation should be larger by 20 cm from its width and length around the entire perimeter - at least 190 x 190 cm at the bottom part.

The depth of the excavation should be 265-270 cm, so that after placing the cellar on a concrete slab or a dry concrete base,



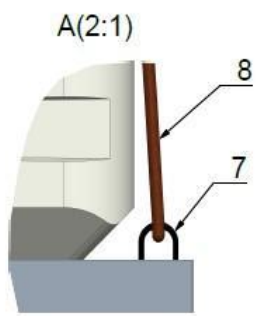
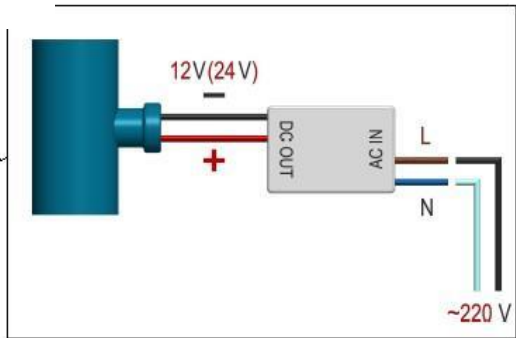
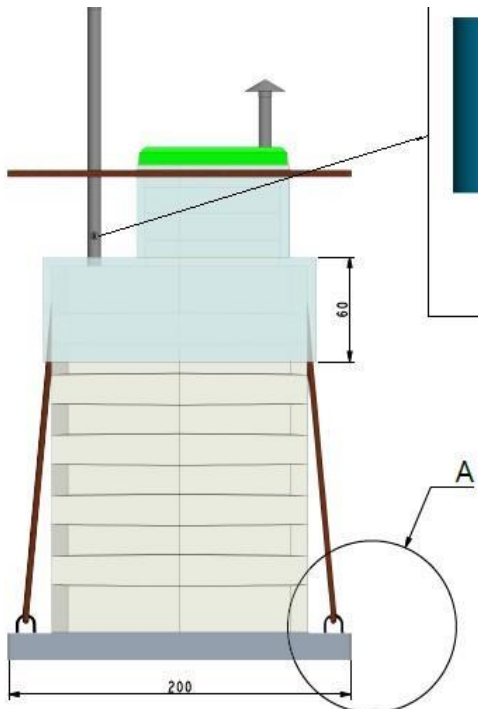
the lower edge of the hatch cover is 5-10 cm above the ground level. This is to prevent rainwater or meltwater from getting inside the cellar. The walls of the excavation should be vertical

and maintain correct dimensions throughout the height. This will significantly facilitate the construction of cellar walls with dry concrete.



Diagram

1. Intake ventilation pipe
2. Exhaust ventilation pipe
3. Thermal insulation from styrofoam
4. Ground level
5. Concrete slab
6. Electrical conduit for LED lighting
7. Strapholders
8. Straps





## Installation

**ATTENTION! During the installation of the Natural Fridge cellar with vertical entry, 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. 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 with a low groundwater level (at least 2.5 m below the surface), it is allowed 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 should be made at the bottom of the excavation, with a minimum size of 190 x 190 cm and a thickness of 15 cm, containing handles for straps.

We place the cellar on the 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. Each layer of 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 to a height of 1 m from the bottom. Then the cellar is covered with sand.

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

## Assembly 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 (Styrofoam or similar) on the top part of the cellar (the 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 hot air (close the air inlet). It is also recommended to insulate the exhaust pipe (to prevent condensation inside the pipe).

### **Attention**

When backfilling the cellar body with soil, do not 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 buyer has the right to free repair of the product in case of defects resulting from manufacturing errors.

The warranty covers the functionality of the fittings, the quality of the food-grade material, the floor and shelves, as well as mechanical and welded connections.

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

- Normal wear and tear of parts and components, natural aging, as well as damage to the coating and surfaces caused by normal use and environmental influences, including aggressive atmosphere, industrial pollution, chemicals, plant juices, stones, salt, etc.;
- Minor geometric deviations that do not affect the quality of the plastic cellar or its components (e.g., slight deviations from the structural dimensions specified in this product passport due to the properties of rotationally molded parts);



- Damage caused by natural disasters, fires, domestic factors, and other force majeure cases;
- Damage caused by third-party actions, including during delivery or installation of the product, which were carried out in violation of the installation instructions for the plastic cellar;
- Damage and deformations of products caused by changes in geometric dimensions that occurred after the completion of installation works and modifications to the product;
- Corrosion caused by scratches and paint chips on the frame as well as on various parts and connections.

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

**Warranty period: 24 months.**

For individual components (weather station, LED lighting) a warranty period of 1 year applies.

Expected lifespan: at least 50 years.

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**Product Manufacturer**

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