

Cellar Qube for concreting

EN

Comprehensive documentation and technical specification of Qube cellars for concreting

Plastic underground cellar Qube for concreting Before you start installing the product, please carefully read these instructions and follow them. Failure to follow the installation instructions will result in loss of warranty entitlement.



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Material: certified polypropylene suitable for contact with food

Model: Qube 1, 2, 3, 4, 5, 6

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1. Basic information

Qube cellars are rectangular, watertight underground cellars made of composite material. They are intended as storage spaces for food and liquids at a constant low temperature and for the placement of technological and other equipment in an enclosed space below ground level, with easy regulation of temperature and humidity conditions. The rectangular shape allows for efficient use of space.

1.1. Variants and combinations

(illustrations see 2. Parameters)

Cellars Qube are manufactured in modules from 2 m to 6 m in length, with 6 entrance variants and 2 installation variants

1.2.Entrances

Qube 1
Inclined entrance with a short staircase for easier access, intended for partial burial of the cellar into the ground. After installation, it forms a decorative embankment.

Qube 2
Horizontal entrance with a long staircase. After installation, this variant will be fully buried underground and allows full use of the land above the cellar (lawn, garden, gazebo...).

Qube 3
Vertical entrance with a long staircase. A variant intended for full burial of the cellar underground. This entrance is manufactured with an extension that protrudes above ground level and forms an entrance shelter.

Qube 4
Vertical entrance without stairs. Intended for burying the cellar into a slope or hill, or for installation using lost formwork.

Qube 5
Inclined entrance with a long staircase, intended for full burial of the cellar underground and the creation of a decorative embankment.

Qube 6
Short decorative entrance without stairs, with wooden doors and a gable for the placement of decorative material. Intended for installation into a slope or using lost formwork.

1.3. Type of installation

Cellar for concreting
Variant intended for installation on a concrete base with subsequent concreting. Ideal for locations with high underground pressure, under parking areas, close to roadways, and also for places with groundwater.

1.3.1 Lengths
Cellar Qube can be ordered as standard in lengths from 2 m to 6 m. The 2 m, 3 m, and 4 m variants are always in stock, while the 5 m and 6 m variants are manufactured upon order. In addition, the cellar can be custom-extended according to requirements.

1.3.2. Construction advantages

- Adaptation to conditions: Flexible design allows installation in various terrain conditions.
- Possibility to choose entrances according to the terrain: Selection of entrances adapted to the specific installation site.
- Unlimited storage space dimensions: Customizable sizes according to customer needs.
- Selection of additional elements: Possibility to equip the cellar according to individual requirements.
- 19-year warranty: Long-term reliability and assurance of quality.
- Watertightness: Protection against moisture and external influences.
- Ecological and chemically pure material: Safe for the storage of food and liquids.
- Rectangular shape: Easy use of space, for example when hanging tools, installing various shelves, or installing equipment...

1.3.3. Structural details
The structure is made of welded polypropylene panels with a thickness ranging from 8 mm up to 15 mm. Around and inside the cellar there is a galvanized steel structure ensuring long service life. Plastic doors with an insulating panel are installed in the cellar.

- Galvanized steel or aluminum stairs
- Shelves made of carpenter-grade plywood
- LED lighting mounted on a KVH timber beam
- OSB flooring

The cellar doors are made of polypropylene; they may be covered

The cellar doors are made of polypropylene; they may be covered with wood or manufactured from wood, metal, or a combination thereof.

Qube 1

Qube 1

PROJEKČNÍ KANCELÁŘ: POLYGOVARE
VYPRACOVANÉ DOKUMENTY: MATERIÁL: SCHVÁLENÍ AGENTURA A.
 KONTROLOVANÉ AGENTURA A.
 DATUM: 10.04.2024
 NÁZEV: MĚŘENÍ
 MĚŘENÍ: 1:40
 MĚŘENÍ: 1:40
 MĚŘENÍ: 1:40

Qube 1	L1, mm	L2, mm	L3, mm
2 m	1994	2164	3621
3 m	2976	3146	4603
4 m	3994	4164	5621
5 m	4976	5146	6603
6 m	5958	6128	7585

Kolomaki ČÍSLO VÝKRESU: A3
 FORMÁT: A3
 LST 1 Z 1 LISTU

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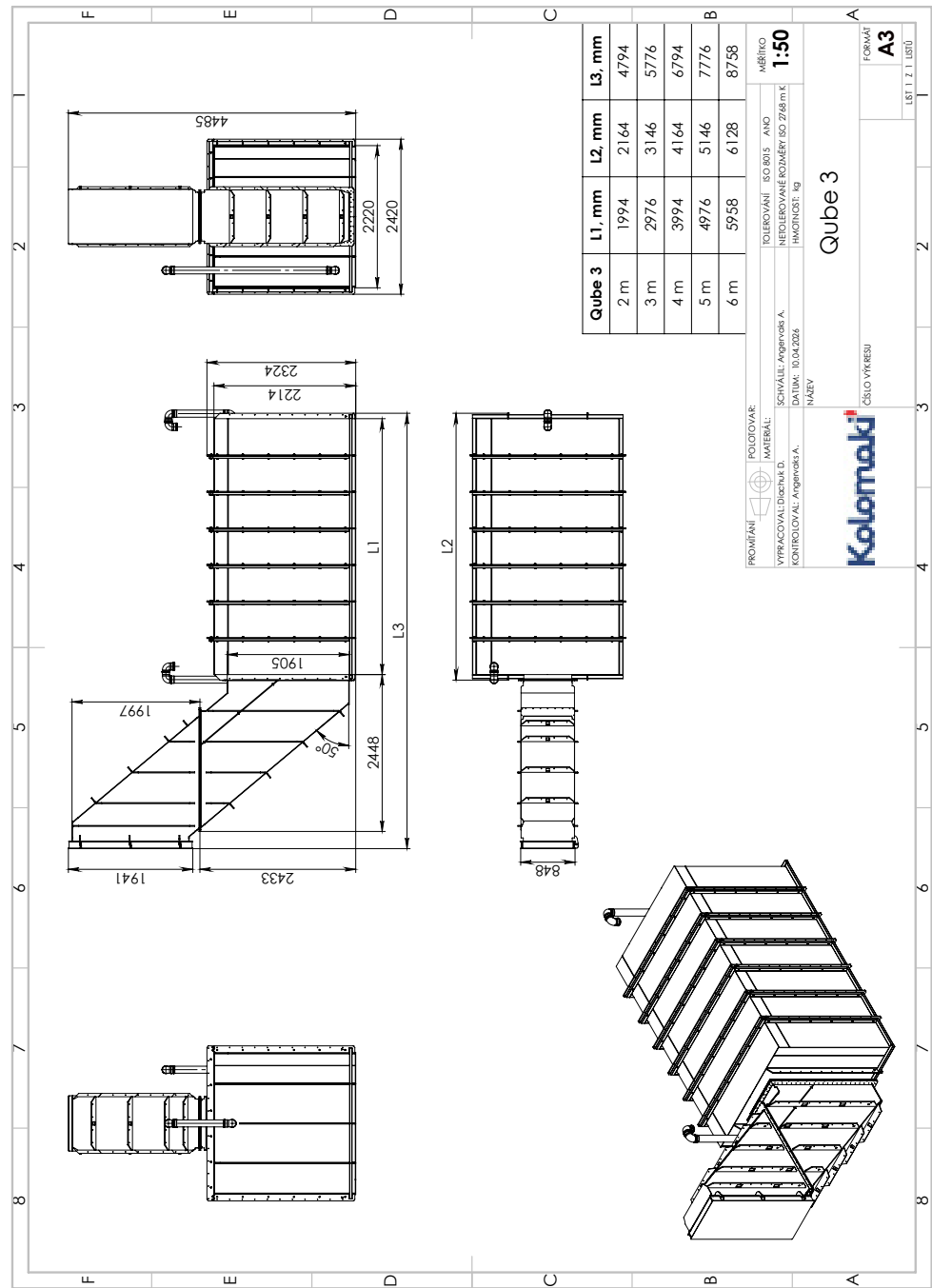
Qube 2	L1, mm	L2, mm	L3, mm
2 m	1994	2164	4710
3 m	2976	3146	5692
4 m	3994	4164	6710
5 m	4976	5146	7692
6 m	5958	6128	8674

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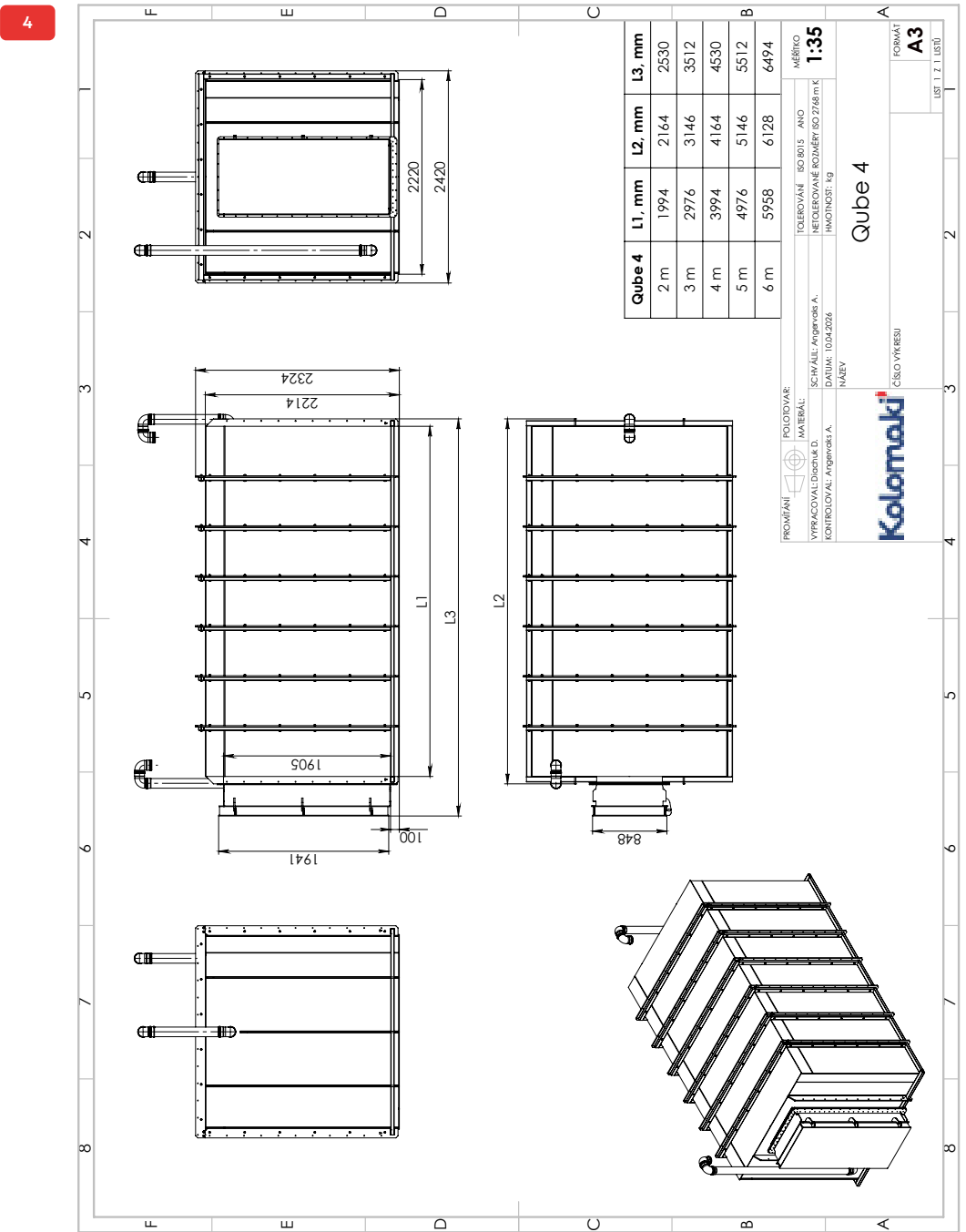
Qube 3

Cellar module length	2m	3m	4m	5m	6m
Floor area (m²)	4.4	6.6	8,8	11	13,2
Overall dimensions (L × W × H, mm)	4 820 × 2 420 × 4 485	5 820 × 2 420 × 4 485	6 820 × 2 420 × 4 485	7 820 × 2 420 × 4 485	8 820 × 2 420 × 4 485
Weight (kg)	690	850	990	1140	1250T



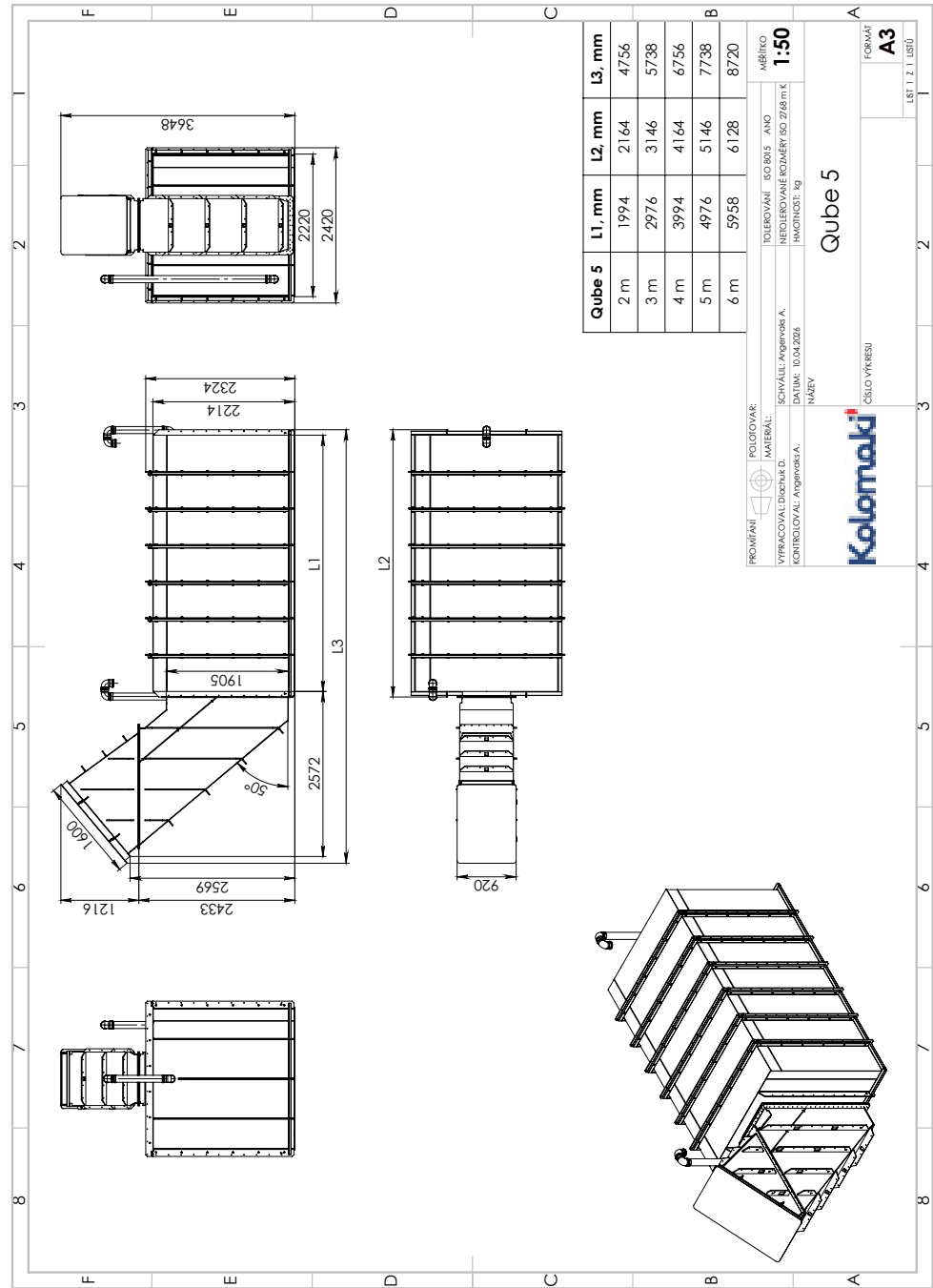
Qube 4

Cellar module length	2m	3m	4m	5m	6m
Floor area (m²)	4.4	6.6	8,8	11	13,2
Overall dimensions (L × W × H, mm)	2 560 × 2 420 × 2 320	3 560 × 2 420 × 2 320	4 560 × 2 420 × 2 320	5 560 × 2 420 × 2 320	6 560 × 2 420 × 2 320
Weight (kg)	580	740	880	1030	1140



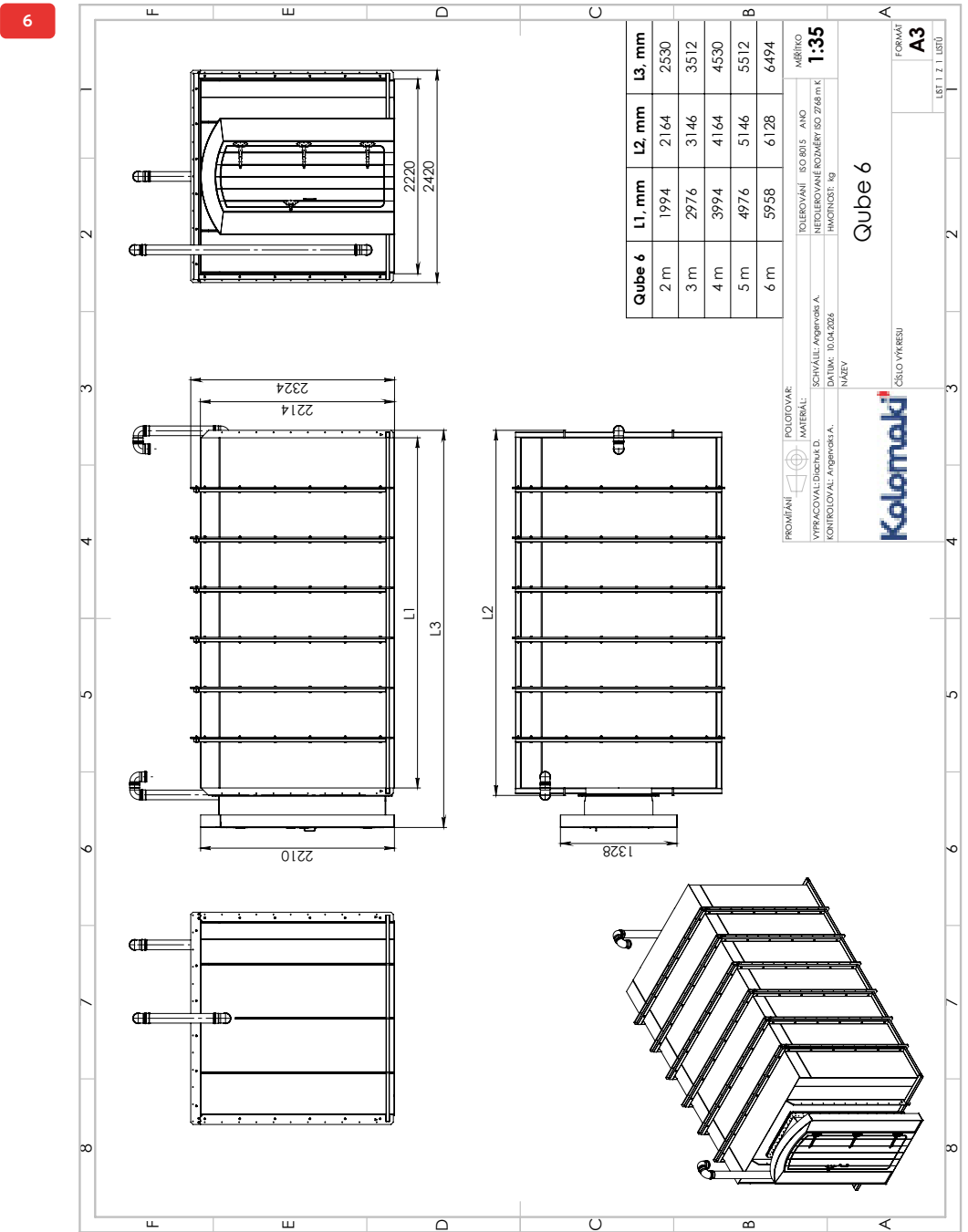
Qube 5

Cellar module length	2m	3m	4m	5m	6m
Floor area (m²)	4.4	6.6	8.8	11	13,2
Overall dimensions (L × W × H, mm)	4 800×2 420 × 3 630	5 800×2 420 × 3 630	6 800×2 420 × 3 630	7 800×2 420 × 3 630	8 800×2 420 × 3 630
Weight (kg)	640	830	970	1120	1230



Qube 6

Cellar module length	2m	3m	4m	5m	6m
Floor area (m²)	4.4	6.6	8,8	11	13,2
Overall dimensions (L × W × H, mm)	2 580×2 420 × 2 320	3 580×2 420 × 2 320	4 580×2 420 × 2 320	5 580×2 420 × 2 320	6 580×2 420 × 2 320
Weight (kg)	590	760	900	1050	1160



3. Transport and unloading

Transport of Cellars Qube can be arranged in several ways: by the client's own transport, by vehicles of Kolomaki, or through a transport company. For transport, we recommend using a trailer or a truck.

Unloading at the installation site

During unloading, it is essential to have suitable equipment prepared. We recommend using, for example, an excavator, a crane, or a forklift truck. Also ensure a sufficient number of people to safely carry out all operations.

Safety instructions

- Caution during handling**
Handling during transport, loading, and unloading must be carried out with maximum care to prevent damage to the product.
- Prohibition of rough handling**
Ensure that there are no impacts or shocks that could damage the cellar structure.
- Proper securing during transport**
The cellar must be properly secured during transport. Make sure that the fastening does not exert excessive pressure that could lead to deformation of the product.
- Caution at low temperatures**
Proceed with particular care at temperatures below 5 °C. Under these conditions, polypropylene becomes brittle and is more susceptible to damage from impacts.

4. Installation

4. 1. Placement conditions

Before installing Cellar Qube, it is necessary to carefully select a suitable location for the excavation:

- Distance from buildings:** The excavation must be located at least 1 meter from any building. Proximity to buildings may cause loads that could lead to deformation of the cellar. The cellar must not be built over or loaded by other structures.
- Protection against potential hazards:** The excavation should be located away from tree roots and other obstacles that could damage the cellar walls.
- Installation on a slope:** If the cellar is installed on a slope, it is necessary to carry out a terrain assessment to prevent landslides or other complications. A static calculation and assessment of the stability of the subsoil or slope should be carried out by a qualified structural engineer or designer.
- Excavation dimensions:** The excavation must be sufficiently large to allow compliance with the required working space width. The dimensions of the construction excavation can be found in section 4.2 Standard installation
- Solid and permeable subsoil:** For proper anchoring of the cellar, the subsoil must be sufficiently solid. The soil around the cellar should be permeable to water. A hydrological assessment of soil permeability is often part of the building permit.

- Presence of groundwater:** It is recommended to choose a location without the presence of groundwater. If groundwater is present, it is advisable to install the cellar during the summer or winter months. To reduce the risk of deformation under these conditions, the cellar for concreting variant is recommended.
- Protection from sunlight:** For better insulating properties of the cellar, it is recommended to choose a location without direct or continuous strong sunlight.

4. 2. Standard installation

Subsoil preparation

For installation of Cellar Qube under standard foundation conditions (with the groundwater level below the foundation joint), proceed as follows:

- Excavation of the pit:** excavate a pit (shored if necessary) with dimensions according to the installation diagram, but at least 350 mm wider than the cellar itself.
- Formation of the base layer:** at the bottom of the pit, create a compacted concrete slab with a minimum thickness of 100 mm and reinforce it with welded steel mesh 8×10.

Installation of the cellar into the excavation

Place the cellar onto the prepared base using suitable equipment (e.g. an excavator or a crane). Ensure that the base remains clean, free of stones and other irregularities.

Recommended drainage (see diagram 7)

- Installation of the drainage system:** After placing the cellar, we recommend installing drainage. Place drainage piping (perforated piping wrapped in geotextile) with a slope on the foundation slab.
- Connection of the drainage:** Connect the piping to an infiltration facility, retention tank, drainage system, or to a DN 400 drainage shaft (installation of the drainage shaft according to installation diagrams 8.1, 8.2, 8.3, 8.4, 8.5, 8,6) with openings and geotextile, in which a sludge pump can be installed.

Connection of ventilation

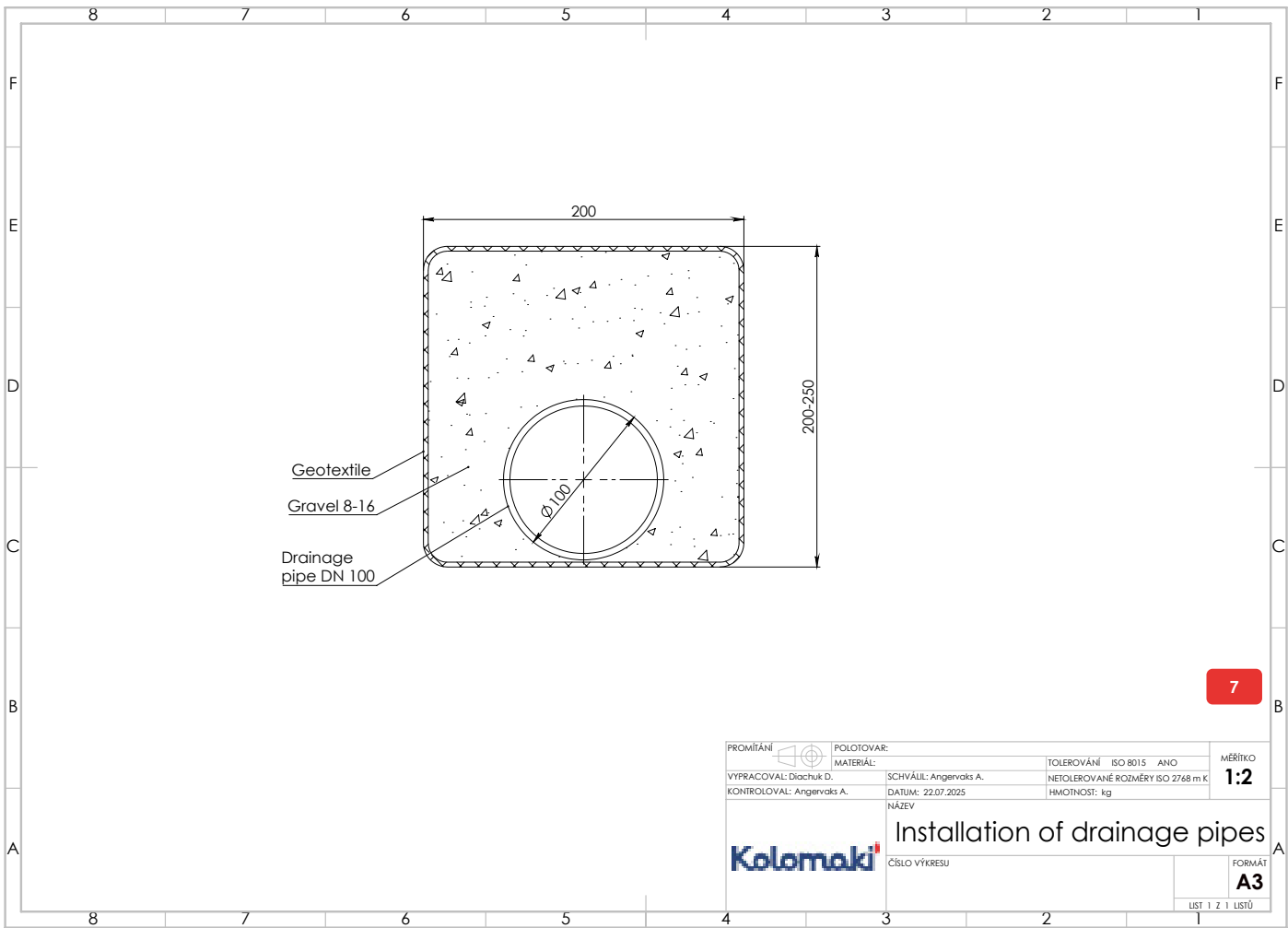
- Ventilation system:** Ventilation is formed by PP piping DN 100 with a closing grille.
- Connection of piping:** Connect the piping to the pre-prepared openings at the front and rear parts of the cellar. Ventilation piping is installed on each main cellar module..

- Custom modifications:** The location and dimensions of the openings can be adjusted according to customer requirements. The cellar structure includes a sealed penetration through which an elbow and piping are inserted.

Reinforcement and preparation of walls for concreting

For this step, we recommend using our prepared Kolomaki Qube Support wooden reinforcements.

- Due to the load during concreting, support the ceiling using props at every meter and place one load-distributing wooden beam in the center of the ceiling.
- Before concreting, reinforce the cellar walls using three longitudinal wooden beams (60×60 or 60×40 mm) at heights of 0, 500, and 1000 mm. Brace these beams using horizontal wooden spacers (80×80 mm) approximately at quarter lengths.
- In the case of concreting the cellar floor or ordering a steel frame for floor reinforcement (see 4.3.1. Installation in elevated groundwater level), the beams at zero height are not required.



Insertion of reinforcing steel

- Insert the reinforcing steel into the prepared openings in the ribs of the product.
- Tie the reinforcing steel with binding wire into a vertical mesh around the entire body of the cellar and the entrance section

Concreting of the cellar

- Before concreting, if necessary, enclose the cellar with formwork at a distance of 150 mm from its walls.
- Subsequently fill the space between the formwork and the cellar with concrete of class C20/C25 according to the installation diagram. Concreting must be carried out gradually; during one day, a concrete layer higher than 100 cm must not be applied.

Removal of props

Remove the supports, reinforcements, and any formwork no earlier than after 10 days, when the concrete has sufficiently hardened.

Backfilling of the cellar

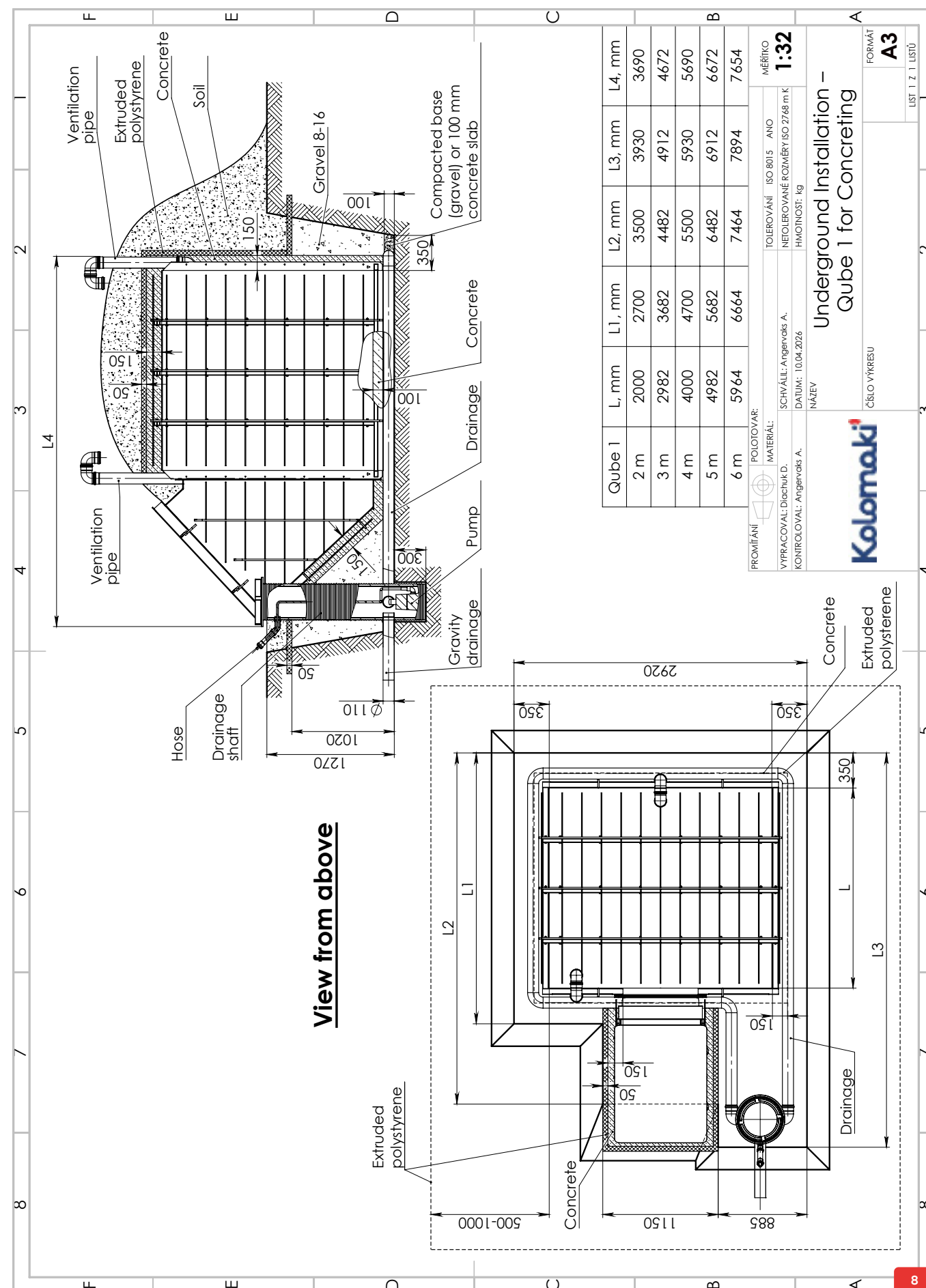
After completion of concreting, fill the space between the concrete and the soil with gravel. For this purpose, it is suitable to use aggregate with a fraction of 8/16 mm.

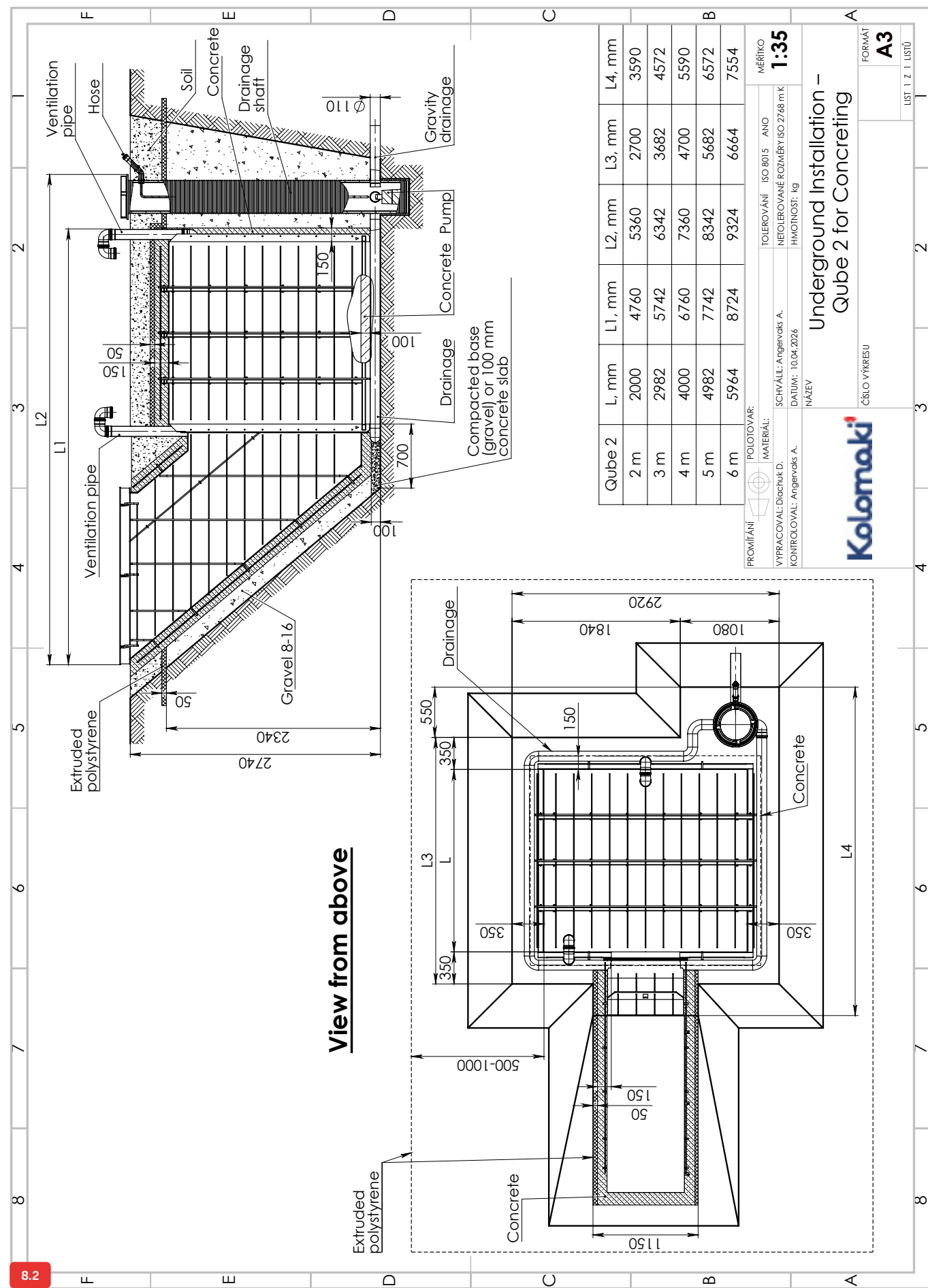
Application of insulation

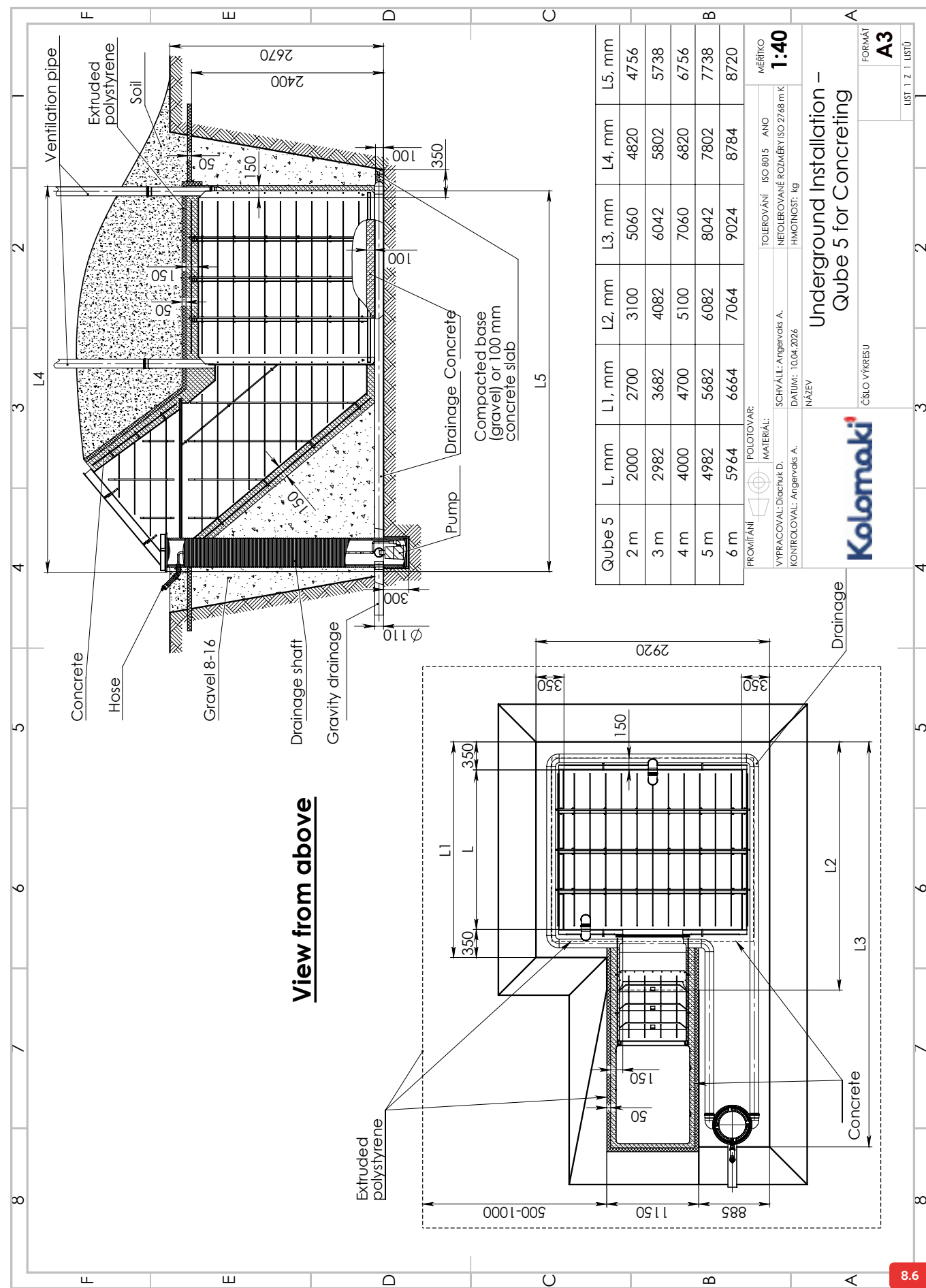
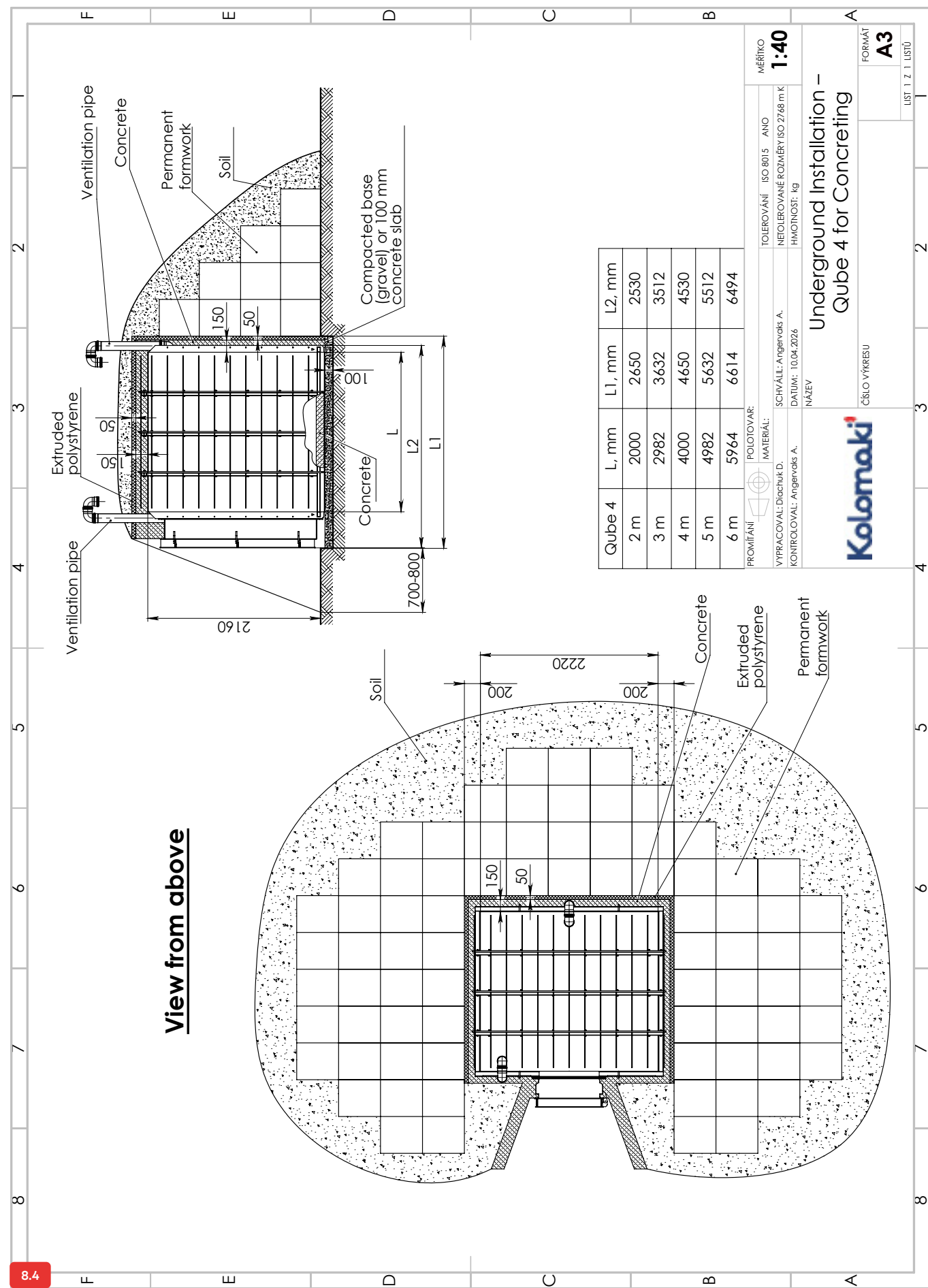
- **Application of the insulation layer:** Apply a layer of extruded polystyrene with a thickness of 50 to 100 mm to the upper part of the cellar (according to the installation diagram).
- **Function of the insulation:** The insulation layer serves to separate and insulate the upper soil from the cellar. This prevents the internal temperature of the cellar from being affected by extreme external temperatures (heat in summer, cold in winter).
- **Extent of insulation:** The insulation layer should extend beyond the cellar by 500–1000 mm (see installation diagram).

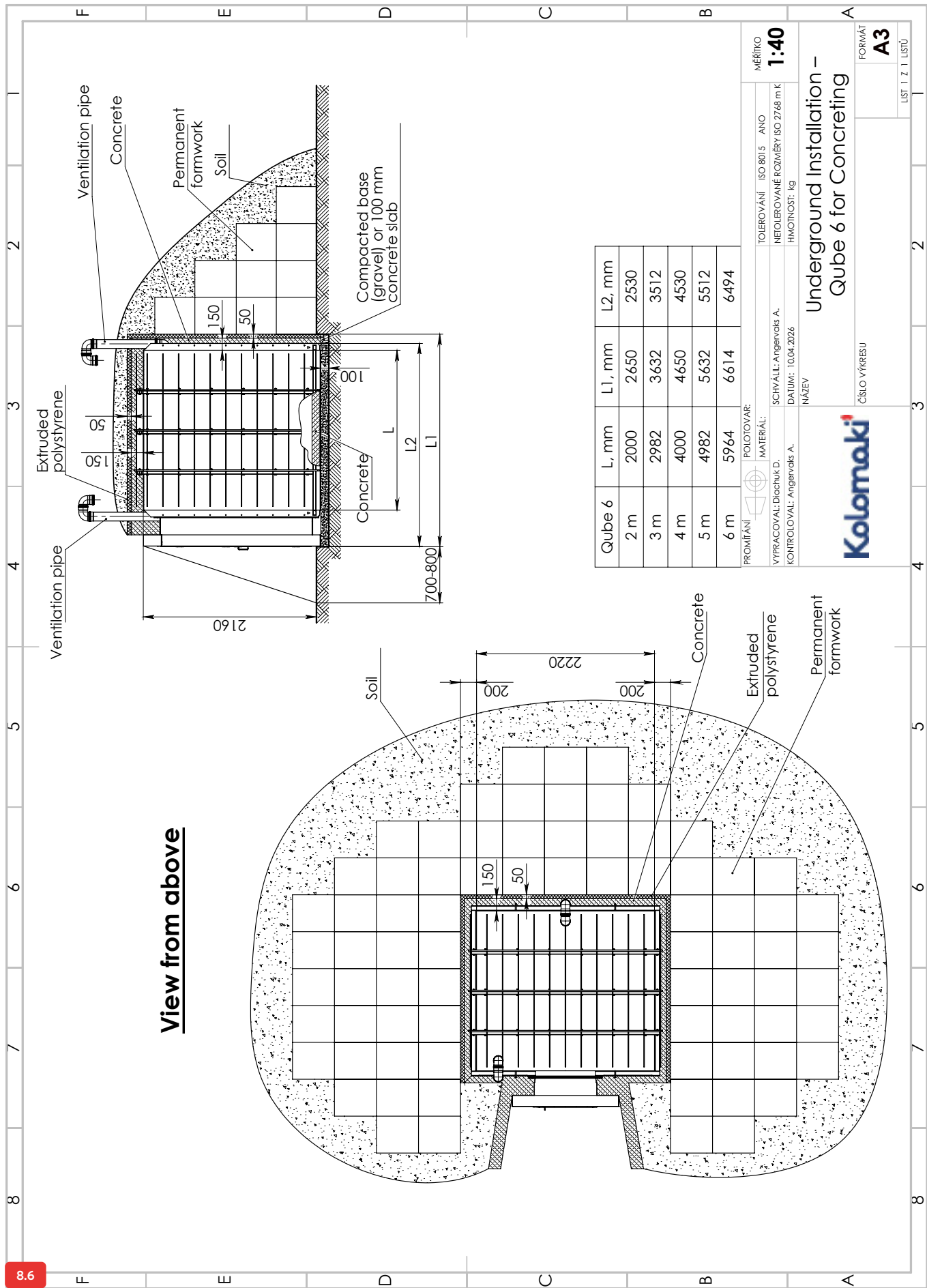
Completion of installation

After backfilling, cover the cellar with the excavated soil. This will add an additional insulation layer and ensure aesthetic integration of the cellar into the surrounding terrain.









4. 3. Non-standard installation situations

All non-standard installation situations must be assessed by a structural engineer or the project designer in order to eliminate possible damage or potential hazards. Based on the project, an additional structural assessment must be provided, prepared by a professionally qualified and authorized person.

4. 3. 1. Installation in elevated groundwater level

Please note that excessively high groundwater pressure may lead to deformation and damage of the cellar structure. Minor deformation of the plastic structure, such as slight bending, is not critical. However, more significant deformation and bending may cause serious damage. For this reason, we recommend:

- Install a cellar model that does not require deep burial (such as Qube 1 and Qube 4).
- Carefully select a suitable installation site, ideally without the presence of groundwater.
- Ensure drainage through a drainage system (according to 4.2. Standard installation – Recommended drainage and diagrams 8.1, 8.2, 8.3, 8.5)

Follow the instructions below to minimize risks associated with groundwater pressure and to ensure long-term stability of the structure

If groundwater is present year-round, it is necessary to concrete the cellar floor or to order the cellar with a steel structure for reinforcement of the Cellar Qube floor.

When ordering the steel structure, proceed in the same way as in 4.2. Standard installation.

If it is necessary to concrete the floor:

- Before concreting, create a compacted concrete slab on the cellar floor with a minimum thickness of 100 mm and reinforce it with welded steel mesh 8×10.
- After reinforcing the floor, continue according to the procedure specified in section 4.2. Standard installation.

To reduce the risk of cellar damage due to groundwater pressure, we recommend installing drainage. (see 4.2. Standard installation – Recommended drainage)

4. 3. 2. Installation above ground surface or on a slope

(see diagram 4, 6)

When installing Cellar Qube above ground surface or on a slope, proceed as follows::

1. Preparation of the concrete slab

Prepare a standard concrete slab at the cellar installation site according to the instructions given in section 4.2 Standard installation. Place the cellar on this slab.

2. Retaining wall

At each side of the cellar that will not be covered with soil, construct a retaining wall made of lost formwork at a distance of 400 mm from the cellar walls. This wall ensures lateral stability and protection against soil slippage.

3. Insulation around the cellar

Apply a layer of extruded polystyrene with a thickness of 50 to 100 mm over the entire height of the cellar, from the bottom to the top. The insulation helps maintain temperature stability and protects the cellar from external influences.

4. Installation of ventilatio

Prepare the ventilation system according to the instructions given in section 4.2 Standard installation. Properly installed ventilation ensures air circulation and prevents the formation of moisture inside the cellar.

5. Concreting of gaps

Concrete the gaps between the cellar and the retaining wall or the lost formwork. Carry out concreting carefully to prevent displacement of the structures and to ensure the stability of the cellar.

4. 3. 3. Installation of a modular cellar

The installation process of the modular Cellar Qube is almost identical to the installation process of a standard cellar. For easier handling of multiple modules at once and better access to the modular joints during installation, it is recommended to prepare an excavation that is wider by 100 mm.

Subsoil preparation

Gradually place the individual modules onto the prepared concrete slab. The slab must be level over the entire area of the cellar to prevent gaps between the modules and the subsoil.

Prepare the sealing

- Apply double-sided adhesive tape to one side of the connecting module.
- Attach the seal to the adhesive tape and align it according to the pre-prepared openings on the seal and on the modular connection.
- The seal is essential for the modular connection, as it prevents water from penetrating into the cellar.

Connection of modules

- Using suitable equipment, move the second module precisely towards the first module.
- To facilitate work and ensure accuracy, it is necessary to have a level subsoil under the modules.

Bolting with screws and nuts

- After aligning both modules, connect the pre-prepared openings using screws and nuts.
- A total of 115 screws with nuts must be installed.
- For this work, we recommend using an impact wrench.

Welding of joints

- **Welding recommendation:** If possible, we recommend welding the joint from both the outside and the inside, or at least from the inside, using an extruder.
- **Welding in the excavation:** When welding in the excavation, only three accessible sides of the modular joint can be welded.
- **Advantages of welding:** This additional work strengthens the cellar joints and increases the overall resistance of the structure.

Connection of modules outside the excavation

If equipment with sufficient load capacity to lift the entire assembled modular cellar is available on site, the connection of modules can be carried out next to the excavation. This procedure simplifies the work process and increases installation efficiency.

Complete the installation according to the instructions in 4.2. Standard installation or 4.3.1. Installation in elevated groundwater level

Welding price

- **Individual calculation:** The price for welding the modules by the Kolomaki team is determined individually depending on the location and the number of modules.
- **Welding abroad:** When welding abroad, the price also includes transportation, accommodation, and labor costs of our team.

5. Additional information

5. 1. Technical recommendations

Cellars Qube do not require regular maintenance. It is recommended to take care of the cellar and not leave it in a dirty condition. Possible causes of problems and methods for their elimination are listed below.

Temperature above or below the optimal value

- **Excessive inflow of warm/cold air:** Limit the air inflow, adjust the flap on the supply pipe. The exhaust must be fully open.
- **Insufficient thermal insulation or insufficient volume of soil above the cellar, absence of a lawn:** Add soil and cover it with a lawn. It is recommended to add decorative elements such as a garden gazebo.
- **Ventilation pipe outlets located in a building above the cellar:** Lead the ventilation ducts outside..
- **Heating of the entrance part by sunlight:** Install protection against direct sunlight.

Formation of condensation

- **Excessive inflow of air with a higher temperature than inside the cellar:** Gradually reduce the inflow. Remove moisture. The exhaust must be fully open
- **Filling the cellar with undried vegetables and fruit:** Carry out preliminary drying of fruit and vegetables before storage.

Squeaking hinges of the entrance cover

- **Contamination or lack of lubricant:** Lubricate the hinges with silicone spray once a year.

Inner insulating doors not closing

- **Deformation of the door holding mechanism:** Adjust the door position using screws.

Slight deformation of the vaulted structure

Increased underground pressure due to groundwater: Wait for the groundwater level to decrease.

5. 2. Service

Kolomaki, s.r.o. does not carry out the installation of products itself. Installation work is performed by specialized organizations or by the customers themselves, who bear responsibility for correct execution of the installation.

However, Kolomaki offers supplementary service services, such as repair or modernization of cellars, based on prior agreement. In the case of warranty repairs, the cost of carrying out the work is covered by the manufacturer. Transportation costs and other related expenses within warranty service are covered by the seller who supplied the cellar to the customer.

For other service work that does not fall under the warranty, the costs are borne by the contracting party – either the customer or the installation organization. The price for these services, including labor, materials, transportation, and possible accommodation for remote locations or foreign installations, is determined individually.

5. 3. Additional information

Production of the product takes 2 weeks. Transport or pickup is arranged individually after ordering.

5.4. Warranty certificate

Product serial number		Manufactured	
		date:	
Delivered to customer:			
date:	carrier:		
Installed:			
date:	installed by		
Serviced:			
date / service provider / brief description of defects and repairs:			

The warranty for Cellars Qube is provided for a period of 2 years, with an extended warranty on the basic polypropylene structure of 19 years. Electrical equipment is covered by a warranty period of 6 months.

Please always photograph the installation step by step and keep documents for all purchased materials.

5. 5. Declaration of conformity

Kolomaki s.r.o.
Registered office: Komenského 576, 273 71 Zlonice
Company ID (IČ): 06142974

issues

DECLARATION OF CONFORMITY

in accordance with the provisions of Act No. 22/1997 Coll., on technical requirements for products and on amendments to certain acts, as amended, and Government Regulation No. 163/2002 Coll., as amended, for the product:

Polypropylene underground cellars of the Qube model series
(product number according to the type label of each cellar)

Manufacturer:
Kolomaki s.r.o., Komenského 576, 273 71 Zlonice,
Company ID (IČ): 06142974

Intended use:
For the storage of equipment, fruit, vegetables, wine, food, and beverages in an enclosed space below ground level, equipped with various accessories and offering options for modular construction.

By this declaration, I confirm that the above-mentioned product complies with the technical requirements specified in the technical documentation and, when installed in accordance with the installation manual and used under the stated conditions, is safe for use within a structure.

The material used, due to its chemically inert properties and high resistance to environmental influences, is also suitable for the accumulation of rainwater intended for technical use or further use.

I declare that I have taken measures to ensure that all products placed on the market conform to the technical documentation and technical requirements, and that the product complies with the technical specifications.

The conformity assessment was carried out in accordance with Section 5a of Government Regulation No. 163/2002 Coll., as amended.

In Zlonice, dated 01 January 2026
Anton Angervaks
Managing Director

6. Manufacturer

Kolomaki, s. r. o.

Komenského 576, 273 71 Zlonice, Czech Republic

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export@kolomaki.com

6.1. Manufacturer responsibility

The manufacturer is responsible for:

1. Overall product quality and compliance with all production standards.
2. Execution of production, quality of welds, and control of production processes.
3. Inspection of all input materials from suppliers.
4. Ensuring that each product has its own production number and production label for possible inspection.
5. Certification of production through TZUS Prague.

The manufacturer is not responsible for:

1. Organization of installation.
2. Incorrect unloading.
3. Incorrect installation.
4. Improper selection of the cellar location.
5. Incorrect installation in the presence of groundwater.
6. Use of the cellar for purposes other than those intended.
7. Improper method of transport.

Important notice

This manual cannot cover all situations that may arise during installation.

Therefore, we recommend paying increased attention to possible circumstances that could lead to product damage. Before starting installation, carefully consider all factors that could affect proper execution of the installation and the long-term functionality of the product.

Compliance with the stated instructions and thorough preparation will help minimize risks.

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