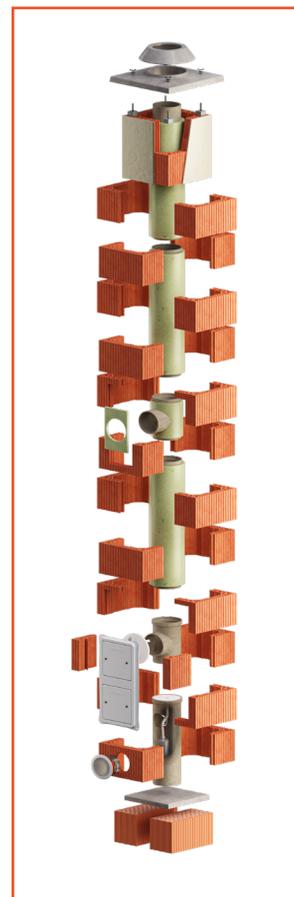




CHIMNEY SYSTEM HELUZ IZOSTAT

You can select the optimum chimney system depending on the energy standard of your house, the type of appliance selected, and the type of fuel. Select the correct solution for your home to run safely and properly.



A modern chimney system with as much functional equipment as possible. In addition to reliable extraction of combustion products, the chimney also ensures the supply of combustion air to the appliance. This feature, together with the tight design of the chimney body, allows use even at the highest housing energy standard (also suitable for blower door testing). The HELUZ IZOSTAT chimney system is suitable for any type of fuel and appliance. As standard, it is supplied as a three-layer system comprising ground shaped blocks for the peripheral cladding, an air gap, thermal insulation, and thin-walled isostatic liners. The system can be freely combined with another Heluz system, with either complete or half ventilation and an installation shaft. With the HELUZ IZOSTAT system, you are sure to make the right choice.



for solid fuels



for gas



temperature class T600



air supply through the chimney



P1 class overpressure operation
P1 = 200 Pa

ACCESSORIES FOR HELUZ CHIMNEY SYSTEMS

HELUZ offers a wide range of accessories alongside the chimney systems. Besides chimney adapters and roofs, accessories include vapour-tight penetration for easy incorporation of the chimney into your building. We recommend consulting a specific chimney system design and suitable auxiliary components with our technical department.

GENERAL INSTALLATION PRINCIPLES

A chimney is a highly functional element of a building and care must be taken to ensure its proper design and construction. First of all, it is important to remember that each individual appliance makes specific demands on the chimney, which are important to respect during construction. Among other things, it is necessary to choose the diameter of the flue properly (check by calculation), to consider the location of the flue well according to the parameters of the appliance, etc.

The delivery note and the inspection label which indicates the technical parameters of the chimney system form integral parts of the installation instructions.

Only original components and binding agents should be used and all applicable standards and building regulations should be observed during construction. The resulting chimney body must comply with the basic requirements specified in ČSN 73 4201.

BEFORE YOU START

It is necessary to ensure suitable thermal conditions before starting installation. The minimum temperature acceptable for installation is +5 °C (during installation and for the following 72 hours). Installation is not permitted if the ambient temperature is lower. If the ambient temperature is higher than 25 °C, it is necessary to moisten the contact surfaces of the brick blocks with water.

It is also necessary to provide a solid base with sufficient load bearing capacity, which will transfer the chimney load into the foundation subsoil. Hydroinsulation should be applied on this base to prevent ground moisture rising into the chimney shell. Before starting the installation itself, it is necessary to measure the chimney body layout properly, including the

condensate discharge method, flue height, and air supply to the appliance itself, if necessary. At the same time, a sufficiently large penetration for the chimney through ceilings and floors, and the penetration for future flue gas ducting through the wall to the flue of the chimney if applicable, should also be prepared.

On the basis of our experience, we know that it is advisable to assemble and cut the chimney up to the height of the flue in dry conditions and only then mix the cementing compound and fix all components together. THE FLUE SHOULD NOT BE CONNECTED THROUGH THE EDGE (CORNER) OF THE CHIMNEY.

You will need suitable tools and instruments for the chimney construction (measuring tape, spirit level, spatula, trowel, angle, drill

mixing adapter, hod, angle grinder or brick cutting saw, cross screwdriver, knife for insulation cutting, plumb line, brush, disc for stone cutting or a diamond disc for angle grinder).

Clean dust and soil from all components of the chimney system (using e.g. a damp brush) before use. If the construction of the chimney is interrupted, the uncompleted chimney should be covered in order to avoid damage caused by rain or construction debris. If the chimney is located outside the building, we recommend applying thermal insulation (do not use polystyrene) at least 50 mm thick. If any installation system (cables, sewerage line) is led in the empty shaft, the materials for these lines should be able to withstand temperatures of at least 70 °C.

LAYING BRICK BLOCKS

Apply adhesive mortar (HLM) to the brick blocks using an application roller (HSN), specifically on both the bearing and contact (horizontal as well as vertical) surfaces of the blocks. Always follow the applicable instructions when mixing and using adhesives! Always position the blocks so that individual layers are turned through an angle of 90° with respect to each other to create brick binding. All ventilation ducts should remain unobstructed within the complete height of the chimney body in order to ensure the correct operation of the chimney body ventilation.



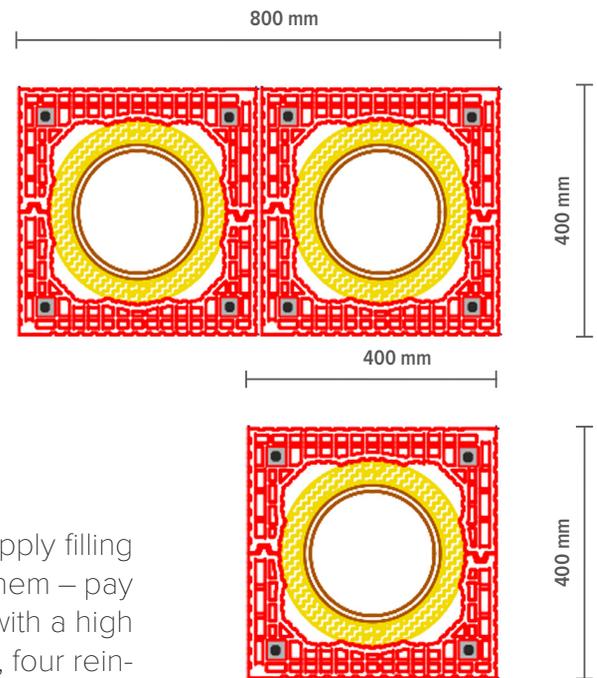
CONSTRUCTION OF MULTI-FLUE CHIMNEYS

When constructing multi-flue chimneys, connecting **HT blocks** are used in each **second layer** of bricks (see the figures below). As for the other aspects, the construction of a multi-flue chimney is similar to that of a single-flue chimney.

CHIMNEY STATIC REINFORCEMENT

Running anchoring of the chimney body to the adjacent structure is necessary at least after **each 4 m of height**. If the part of the chimney above the roof exceeds **1.3 m above the last anchoring point, it is necessary to reinforce the chimney statically** (this requirement always applies to Grand rings). **Corner holes in the chimney block or Grand ring are intended for this purpose**. It is possible to insert reinforcements (HZV – not included in the chimney

unit delivery) and to apply filling compound (HCZ) on them – pay attention to mixtures with a high shrink rate. In this way, four reinforced concrete columns will be created with a high bending resistance, which will increase the strength of the chimney body in the part above the roof considerably. If reinforcement is carried out, remember to insert blinding plugs in time in the corner holes in the course of chimney reinforcement. The distance of the blinding plugs **under the roof**



plane should be as high as the height of the part above the roof. These blinding plugs will prevent filling compound flowing into the lower parts of the chimney (the blinding plugs form part of the reinforcement). Any exceptions should be consulted with the chimney manufacturer or designer.

BEFORE COMMISSIONING THE CHIMNEY

Each chimney must be approved by an authorised person (safety inspector) before commissioning. The inspector will review the correctness of the basic details and the correct connection of the appliance to the chimney. This rule also applies when connecting a provisional heater before the construction is completed. **ATTENTION: A surface finish should be applied along the whole height of the chimney.**

RULES FOR CHIMNEY USE

The chimney can be commissioned **3 days** after completing installation (at ambient temperatures higher than 10 °C). When temperatures are lower (below 10 °C), the period between completing installation and commissioning **is extended considerably (5 – 10 days)**! We recommend consulting potential uncertainties with your supplier.

It is necessary to avoid direct contact between flames and the isostatic lining (average flame temperature is approximately 900 °C)! Direct flame contact or **temperatures exceeding 600 °C** can **cause cracks to form** (e.g. when the building is provisionally heated, excessive heating of a local stove, when using an unsuitable type of fireplace lining – without a top curtain or when using a wood gas boiler which is not fitted with controlled regulation of combustion product temperature for initial heating).

FOR THE ABOVE-MENTIONED REASONS, THE FOLLOWING RULES APPLY TO THE USE OF THE CHIMNEY ▼

- prevent combustion products with temperatures higher than 600 °C from reaching the isostatic liner and avoid the possibility of flames entering the chimney
- put a temporary heater as far away from the chimney as possible and use long flue pipe ducts, or break the combustion product supply line with more bends, PAY ATTENTION to older types of appliance without a curtain (deflector) – the most common reason for the occurrence of problems
- operate any local stove at optimum performance, any changes in the colour of the appliance or flue duct due to temperature means an increased risk
- use a fireplace liner or stove with a curtain (deflector) to prevent flames from entering the flue duct
- when using a wood gas boiler, controlled regulation during initial heating is required, it is necessary to use suitable fuel for heating, and to add it according to the recommendations of the appliance manufacturer – e.g. do not use wet, undried wood, waste, or other unsuitable material for combustion, do not add an excessive amount of fuel, do not "choke" the appliance, etc.

THE GUARANTEE DOES NOT APPLY TO CRACKS IN THE ISOSTATIC LINERS AND FLUE DUE TO THE DIRECT ACTION OF FLAMES OR TEMPERATURES ABOVE 600 °C AND CRACKS DUE TO OTHER METHODS OF CONNECTING THE APPLIANCE THAN THAT RECOMMENDED VIA THE ORIGINAL HELUZ ADAPTER!

In order to maintain the long-term service life of the chimney, we recommend applying a penetrating coating (e.g. Alpalith StoneTec IS) on the cover plate and other concrete elements in the section above the roof every 2 years.

If all the installation instructions and rules for the use of the chimney are followed, its proper function and long service life are guaranteed. Failure to observe these instructions and rules will void the warranty provided by the manufacturer (see the warranty card). If any doubts or questions arise, please contact your chimney dealer or the manufacturer directly – HELUZ cihlářský průmysl v.o.s.

BEFORE STARTING CONSTRUCTION

This system chimney resistant to soot fire is designed for dry atmospheric operation and for appliances burning all types of fuel. It can also be used for combustion air supply. Before starting construction, it is necessary to familiarise yourself with the HELUZ General Installation Principles (see p. 2).

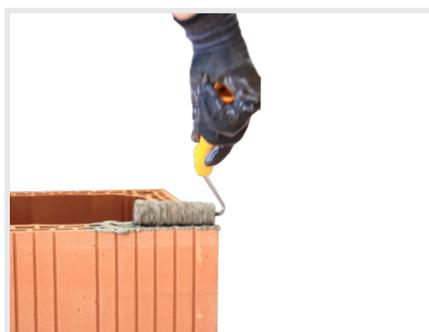
All components (brick blocks, liners, cover plate, collar) that will be used for the construction of the chimney must be free of dust and dirt.

It is recommended to first assemble the chimney and cut the necessary holes up to the height of the flue and only then to mix the necessary materials and fix all the components together.

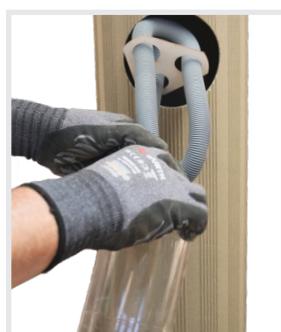
INSTALLATION INSTRUCTIONS - HELUZ IZOSTAT SOLID FUELS



1. The HELUZ chimney system is always set on waterproofing material. To thermally insulate the chimney from the base slab, first align two HELUZ 20 2in1 (H20) brick blocks in a mortar bed made of standard masonry mortar (not included in the delivery) and cut the brick blocks to the required height so that the top surface of the base slab (HPD) is above the basic floor level. Apply a layer of adhesive mortar (HLM), prepared according to the instructions on the packaging. Set the base plate into the adhesive mortar and level it with a rubber mallet and a spirit level. For vertical chimney lining, it is necessary that the slab is levelled horizontally.



2. Apply adhesive mortar on the cleaned base slab using the attached application set – roller (HSN). Also apply adhesive mortar on the bearing and contact surface (tongue and groove) of the cleaned blocks. Place the first two blocks with mortar on the base plate and press them together. Always install each subsequent layer of blocks turned through an angle of 90° so as to maintain binding! When constructing, it is necessary to make sure that all ventilation channels within the complete height of the chimney body remain free and continuous. Installation instructions for multi-flue chimneys and chimneys with shafts can be found at www.heluz.cz.



3. Apply adhesive mortar to the base plate in the centre of the blocks and put the condensate sump (HSJ) with its socket turned upwards. Condensate drainage is ensured by means of a flexible hose located inside the sump. Condensate can be discharged directly into the sewerage system or into a condensate storage tank (HSKI). Put the flexible hose through the attached triangular plate downwards, up through the second hole and downwards again through the third hole. This arrangement creates a siphon with an overflow level of min. 15 cm. Then connect it either to the sewerage system or to the condensate container supplied with the chimney assembly depending on the amount of condensate generated during the operation of the appliance. Hang the condensate container in the condensate sump using the holder included in the delivery.

The condensate sump, as well as the chimney liners, can be shortened as required with a stone cutting disc. This allows the outlet through the smoke uptake to be positioned exactly at the desired height.

* Adapter for combustion air supply – see page 9



4. Shorten the thermal insulation (HFR) according to the length of the part to be insulated (remove 2 segments for 180 mm liner diameter and 4 segments for 160 mm diameter). On the outer side of the insulation (with mesh), draw the mouth of the door block and cut a hole with the edge from the internal side chamfered at an angle of 45°. Insulation is not to be applied to the sockets of the joints. Attach the modified insulation to the door block (smoke uptake, liner blocks) using binding strips (HSP – 2 x 1 insulation block). Prepare the joint compound (HHS) according to the instructions and apply enough to the cleaned condensate sump outlet joint that it is squeezed out of the joint when the door block (HSD) is fitted. Clean all joints formed in this way immediately from both inside and outside. Now dry-fit 3 rows of brick blocks and draw and cut two holes 250 x 250 mm in them above each other with a gap of 90 mm between them so that the centre of the top hole is at the centre of the door block outlet. These two holes will be covered with the double chimney door (HWD 2P). The third hole for the connection of the flue gas duct has dimensions of 280 x 420 for installation of the front insulation plate (HWB 45, HWB 90). Then apply adhesive mortar on the prepared blocks and fit them together.



5. Install one centring set (4x) of spacer sleeves (HOD) in each 4th row of chimney blocks for centring the flue gas route. Carefully cut one side of a brick in one of the two triangular holes in front of the hexagonal hole for reinforcement with a hammer so that the spacer sleeve does not protrude above the edge of the brick after fitting. "Pre-stress" the spacer sleeves according to the diameter of the liner and suspend them with the upper end of the arm into all 4 corners of the modified block.



6. Apply joint compound on the cleaned and moistened joint of the door block and fit the connection of the smoke uptake (HSV, HSL) or the chimney liner (HSZ), all with thermal insulation (HFR). Fit the brick blocks with precut holes with dimensions of 280 x 420 mm in them for the front insulation board (HWB), which will be fixed into the hole with the dowels included in the delivery. Always connect the flue duct with a chimney adapter. Incorrect connection can cause the flue duct to crack. In the next steps of the chimney body construction, assemble the chimney liner blocks with thermal insulation, brick blocks and spacer sleeves according to the previous procedure.



7. If the section of the chimney above the roof is higher than 1.3 m or is made of GRAND rings (HCP), it is necessary to use reinforcement (HZV) the length of which corresponds to double the height of the section above the roof. Therefore, it is necessary to calculate the height at which the blinding plugs will be fitted into the brick blocks and then the installation of the reinforcement can start. The detailed procedure can be found in the assembly instructions for the reinforcement of the section above the roof.



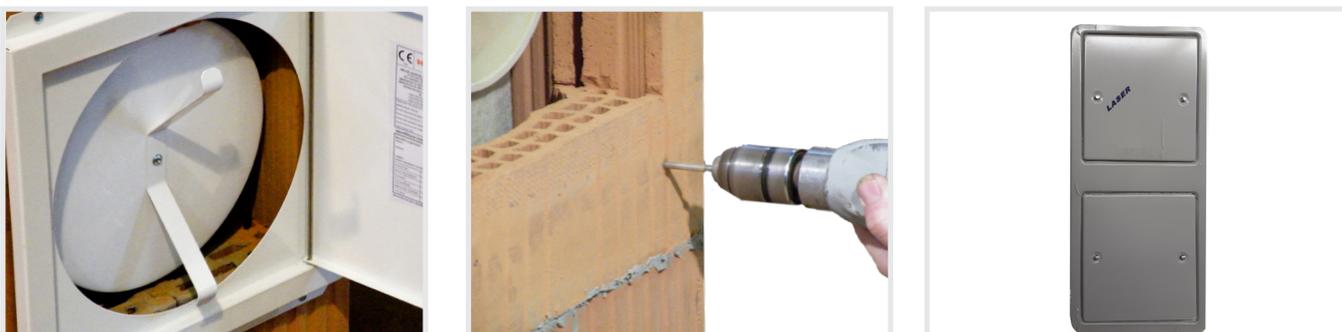
8. Construct the chimney body up to the required height. Insert a termination sleeve (HOD 2), which allows liner centring in the chimney axis into the mortar bed in the last joint of the chimney blocks (HU) or GRAND rings. Cut the thermal insulation so that it ends at least 5 cm under the level of the last chimney brick block or GRAND ring. Before fitting the last chimney liner block, first dry-fit the cover plate (HDZB) and measure the required length of the liner according to the cover plate and collar (HULB). The chimney collar must not be glued to the cover plate.



9. Insert the screws of the fixing set (HSU, if no reinforcement has been used) into all corners of the last chimney block (HU) and pour grout into the holes. Put the spacers (HDP) on the screws. Drill holes in the cover plate with a drill without hammering according to the dimensions of the inserted screws. Fit the cover plate and carefully tighten the wing nuts to prevent the screws from being torn out.

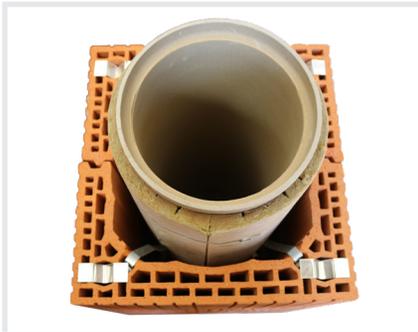


10. Clean the modified cut chimney liner block, apply joint compound on it and fit the chimney collar. Wipe off the excessive joint compound and clean the joint. A gap of 15 mm should remain between the top edge of the covering plate and the bottom edge of the collar for chimney ventilation.



11. Attach the double chimney door (HWD 2P) to the cut out holes for the door block and the condensate sump and mark the points where the holes for the bolts will be drilled without hammering with a no. 5 drill bit through the holes in the door edge. Screw on the door using the HSS fastening kit included in the delivery. Position the control cap (HKA) on the door block. The inspection technician will attach the completed chimney flue identification label and cover it with the protective film included in the delivery.

SECTION ABOVE THE ROOF, REINFORCEMENT, GRAND RINGS



1. If the section of the chimney above the roof is higher than 1.3 m or is made of GRAND rings (HCP), it is necessary to use reinforcement (HZV) the length of which corresponds to double the height of the section above the roof. At the point where the reinforcement should start, fit the blinding plugs into the chimney blocks. In the case of a multi-flue chimney, always stiffen only the corners of the chimney body. Lay another two rows of chimney blocks, insert and centre the threaded rods. If the required length of reinforcement is longer than 1 m, the threaded rods should be connected using the extending nuts included in the delivery.



2. Moisten the holes in the brick blocks with water and pour grouting compound (HCZ) in them. Repeat this step after every additional half metre of the chimney. For GRAND rings, end with brick blocks in the under-roof section so that the rings do not interfere with the roof plane. Moisten the last layer of blocks and use a trowel to apply a min. 0.5 cm layer of GRAND bonding compound (HCL). This compound must be applied evenly over the entire surface so that rainwater cannot get between the rings. Clean the ring, position it, and level it using a spirit level and a rubber mallet. Wipe off any excess with a sponge. Turn the next ring through an angle of 90° to maintain binding. Continue in the same way until the desired chimney height is reached.

Cut the end of the reinforcement so that it ends above the level of the fitted cover plate (HDZB) with the spacers (HDP) and the wing nuts can be screwed onto them. The stiffening reinforcement (HZV) here replaces the bolts of the fixing set (HSU). Each chimney must be anchored at the point where it passes through the roof structure. Roof battens can also be used as temporary anchorage during construction to anchor the chimney to the roof structure to prevent it from falling in strong winds.



3. If the combustion air supply adapter is used, cut a 170 mm diameter round hole in the centre of the chimney wall at the required height. Glue the stainless steel transition adapter into the hole using adhesive mortar (HLM). Cut a hole in the rubber membrane according to the diameter of the pipe to be connected. To ensure tightness, the opening in the membrane must always be smaller than the diameter of the pipe to be connected.

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