



Installation instructions

Fireplace insert + RLU





PREFACE - QUALITY PHILOSOPHY

You have decided to purchase a SPARTHERM fireplace. Thank you for showing confidence in our product.

In a world of surplus and mass production, our company stands for the values expressed by our owner, Gerhard Manfred Rokossa:

"High technical quality combined with contemporary design and service to the customer and their satisfaction and further recommendation."

We offer first-class products that touches your customers emotionally and address their feelings such as the feeling of safety, security and comfort. In order to become completely familiar with your purchase in the shortest possible time, we recommend that you read through these installation instructions carefully. In addition to detailed instructions on installing your product, this document also contains important safety information, advice on how to keep your fireplace insert in good condition, valuable tips and helpful recommendations. Should you have any further questions or problems, please contact us directly. We are always happy to receive your questions, suggestions and any comments.

On behalf of the whole team at Spartherm, we wish you every success with the installation of your fireplace insert and many hours of happiness in front of your new fire.

The SPARTHERM team

CONTENT INSTALLATION INSTRUCTIONS

1.	General instructions	4
1.1	Loading door	5
1.1.1	Self closing and non self-closing door	5
1.2	Conversion from self closing loading door to non-self closing and viceversa	6
1.2.1	Hinged loading doors	6
1.2.2	Sliding doors - before installation	7
1.2.3	Sliding door - after installation	8
1.3	Assembly sequence	9
2.	Basic requirements for setting up a fireplace system	9
3.	Setup and combustion air supply	9
3.1	Location of the fireplace	9
3.2	The operation of the fireplace system is not at danger if	9
3.3	Do not install the fireplace in the following locations	10
3.4	Combustion air supply	10
3.5	Combustion air piping	10
4.	Exhaust circuit shut-off device	10
4.1	Flue damper	10
5.	Special notes about RLU (room air sealed)	11
5.1	General	11
5.1.1	Connection chimney/connection piece	11
5.1.2	combustion air supply room air sealed	12
6.	Fire protection on / in the fireplace system	12
6.1	Special precautions for fire protection	12
6.1.1	Floor coverings near the fireplace	12
6.1.2	Combustible components	14
6.1.3	Fireplace inserts - area of direct radiant heat	15
6.1.4	Sill beam made of hardwood	16
6.2	Concrete and reinforced concrete load-bearing components	16
6.3	Wooden beams	16
6.4	Insulating layers	16
6.4.1	Insulating material thickness	16
6.4.2	Protecting the mounting wall with a stud wall	17

7.	Installation guidelines	18
7.1	Important information for window frame installations	18
7.2	Expansion gap between the casing and the fireplace insert	20
7.3	Fireplace Mantel	21
7.4	Connecting piece	21
7.5	Heat dissipation	21
7.5.1	Hot air systems	21
7.5.2	Fireplace systems with a clay lined chimney	21
7.5.3	Closed fireplace system casing	22
8.	General installation instructions for installation spaces made from non-combustible construction materials	22
8.1	Floors and walls	23
8.2	Floors, walls and ceiling	23
9.	General installation instructions for installation spaces made from combustible construction materials	24
9.1	Floors, walls and ceiling	24
9.2	Insulation	25
10.	Cleaning the fireplace systems	25
11.	Maintenance	25
12.	Special information for Spartherm fireplace inserts	26
12.1	Flue gas outlet	26
12.2	Fireplace insert with vertical sliding door	26
12.3	Carrying aids	27
13.	Disassembly	28
13.1	Safety information for disassembly	28
13.2	Dismantling the unit	28
14.	Disposal	28
14.1	Disposing of the packaging	28
14.2	Disposing of the unit	28
15.	Appendix	29
15.1	Accessories	29
15.2	Standards and regulations	29
15.3	Declarations of conformity	29
16.	Technical Data	30

1. GENERAL INSTRUCTIONS

These installation instructions comply with the provisions outlined in DIN EN 13229 "Solid-fuel fireplaces".

All national and regional regulations, standards and norms, methods of installation and material specifications must be observed.

Please consult your district master chimney sweep before assembling and installing the fireplace insert. He will advise you of building law regulations, the suitability of your chimney, and will execute the acceptance procedure of your system.

Installation site:
The fireplace may only be installed on non-flammable installation surfaces with sufficient load-bearing capacity!

Installation:
Installation and assembly are always carried out in accordance with the TROL Professional regulations of the tiled stove and air heater construction trade (ZVSHK).

Small children, elderly or infirm persons:
As is the case with all heating devices, it is expedient that you attach a protective fixture for these groups of persons, as the view pane and the cladding parts of the fireplace can become extremely hot!

➔ Danger of burn injuries! ⬅

Never leave these groups of persons unattended near the fireplace insert when a fire is burning or has just been extinguished! Please ensure that persons belonging to these groups are made aware of the dangers.

No combustible objects, materials or substances should be placed on or near the free surfaces of the fireplace system.

The surfaces of your fireplace system such as the operating handles, doors, viewing glass, etc. are getting hot by energy released during the combustion process. Do not attempt to touch these components without adequate protection (i.e. **heat-resistant gloves**).

The fireplace insert must never be modified! In particular, never install any components into the combustion chamber, combustion passages or the gas flue that have not been approved by SPARTHERM. Your fireplace warranty will be rendered invalid by any fireplace modification carried out using components not approved by SPARTHERM.

You may find that extractor hoods, ventilation equipment, etc., installed in the same room (or linked space) as your fireplace or stove, have a negative effect on the fireplace insert (such as the release of smoke into the room). These devices should not be used at the same time as your fireplace or stove, without first ensuring that the necessary room heating system precautions have been taken.

Proof that the flue gases of the fireplace insert are properly discharged into the open air under all intended operating conditions and that there is no excess pressure compared to the installation room, as well as proof of the adequately dimensioned combustion air line, must be provided in accordance with DIN EN 13384-1. The calculation can be made according to the TROL specifications.
When using more than one fireplace in a single room or linked space , ensure that sufficient air is available for complete combustion!

This is an intermittent appliance, so longer burn times are achieved by reloading every 45 minutes. It is not allowed to achieve longer burn times by reducing the combustion air and thereby smothering the fire.

According to the type of fireplace inserts used low-pressure values of more than 20-25Pa can have an impact on the correct use of the fireplace insert. Those values may lead to stains on the glass or create noise.

Transport damage: immediately on arrival, please check the goods delivered (visual inspection). Make a note of any damage on your delivery document. Inform your stove or fireplace fitter of the damage before the installation work begins. When installing the casing of your fireplace insert, take care to protect the viewing glass from damage or soiling.

The technical data of your fireplace insert can be found from page 30.

1.1 LOADING DOOR

The suitability of the fireplace insert for multiple allocation (two or more fireplace inserts on the same chimney) depends on if the door has a self-locking function:

Self-locking door function: fireplace insert is suitable for multiple allocation

No self-locking door function: multiple allocation is not permitted, thus, the fireplace insert must be connected to its own chimney line.

Note: with a multiple allocation of the chimney, this must be built and designed accordingly.

Generally, Spartherm fireplace inserts are operated correctly when the loading door is closed. thus, with the exception of feeding or cleaning, the fireplace insert doors must be shut.

Separately inspected fireplace inserts for operation with the combustion chamber door open are listed in the technical data with corresponding triple values.

When operating on a chimney with single allocation (one fire area for each chimney line), the operator can choose if the combustion chamber door is self-locking or not self-locking. The correct position of the loading door when operating the fire is always the responsibility of the operator and must be observed.

1.1.1 SELF CLOSING AND NON SELF-CLOSING DOOR

Spartherm inserts equipped with a sliding door are not self-closing when delivered, Fireplace insert with a hinged do have a self closing installed. The fireplace inserts with sliding door can be converted to a self closing door by removing some of the door counter weights. Hinged door inserts can be converted to non-self closing by relieving the door spring. The door locking type with folding fireplace insert with non-locking combustion chamber door can be converted into a self-locking combustion chamber door by relieving the door closing spring.

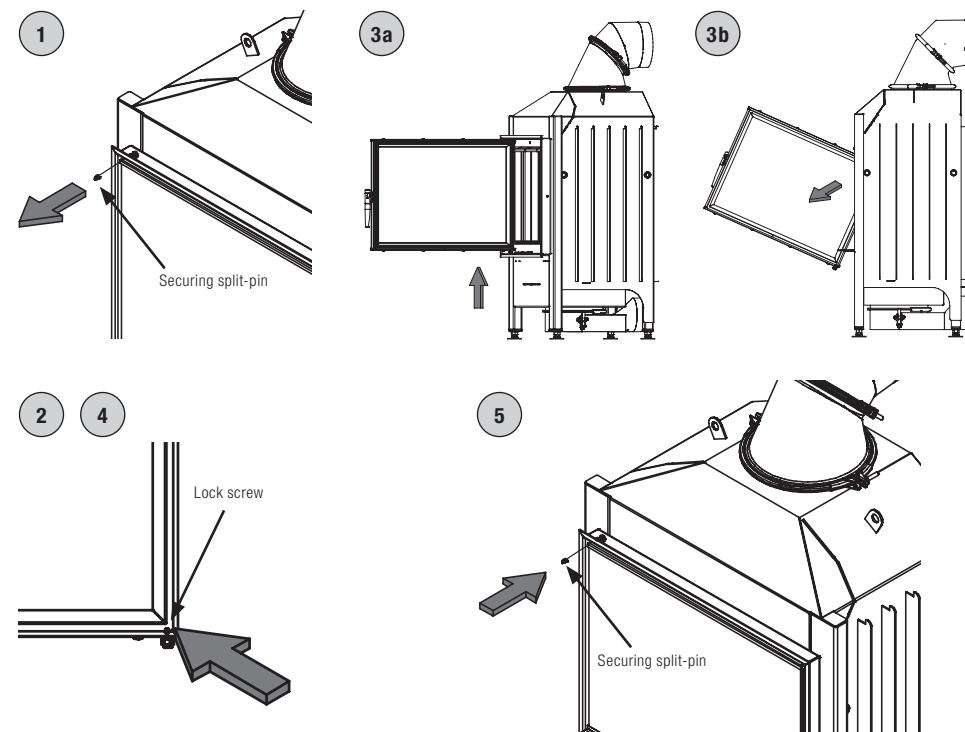
The next chapter will show you how to do this.

Retrofitting the closing function for room air sealed fireplace inserts is not permitted. Fireplaces of this type may only be operated with a self-closing door.

1.2 CONVERSION FROM SELF CLOSING LOADING DOOR TO NON-SELF CLOSING AND VICEVERSA

1.2.1 HINGED LOADING DOORS

Conversion of a self closing hinged door to a non - self closing door by relieving the door spring.

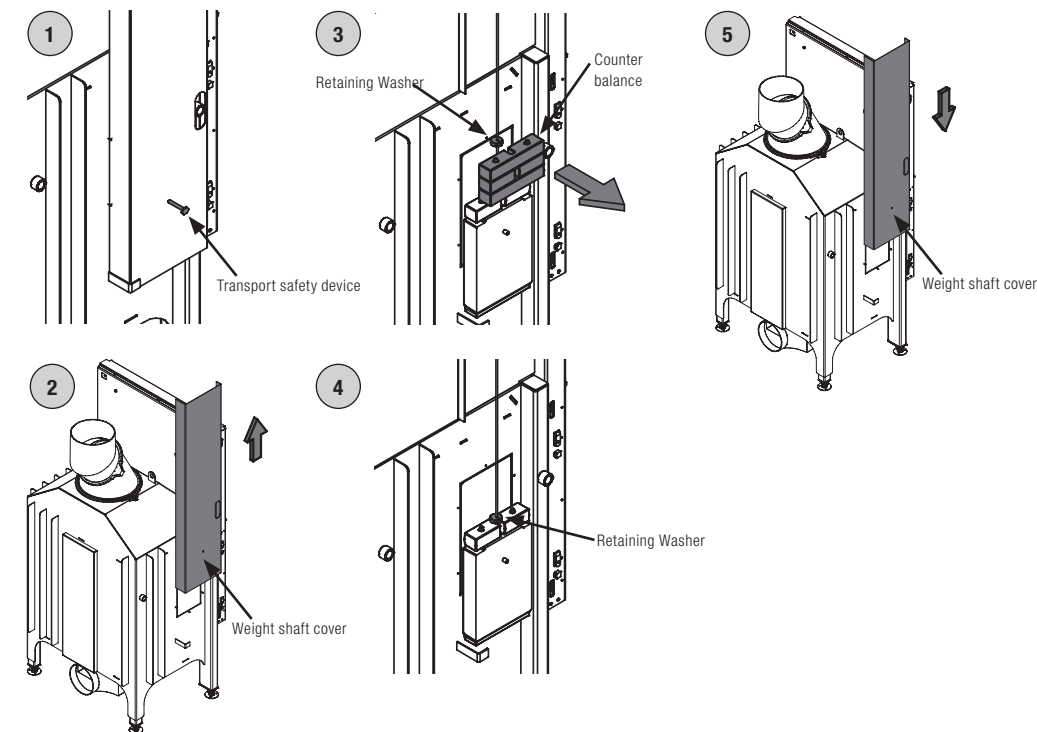


GB 6

1. Remove the securing split-pin between the frame and door.
2. Secure the door locking spring (Allen key 2.5). Tighten the locking screw located at the bottom right in the corner of the door at the bottom pivot point. This may be located a little under the grey cord seal. Be careful to not damage the seal!
3. Take out the loading door
4. Relieve the locking screw (Allen key 2.5). A significant clicking sound should be heard.
5. Place the loading door back and mount the securing split-pin.

1.2.2 SLIDING DOORS - BEFORE INSTALLATION

Conversion of a non-self closing loading door to a self closing loading door by removing counterweights. Carry out the fireplace inserts with two weight shafts in the same procedure on both sides.



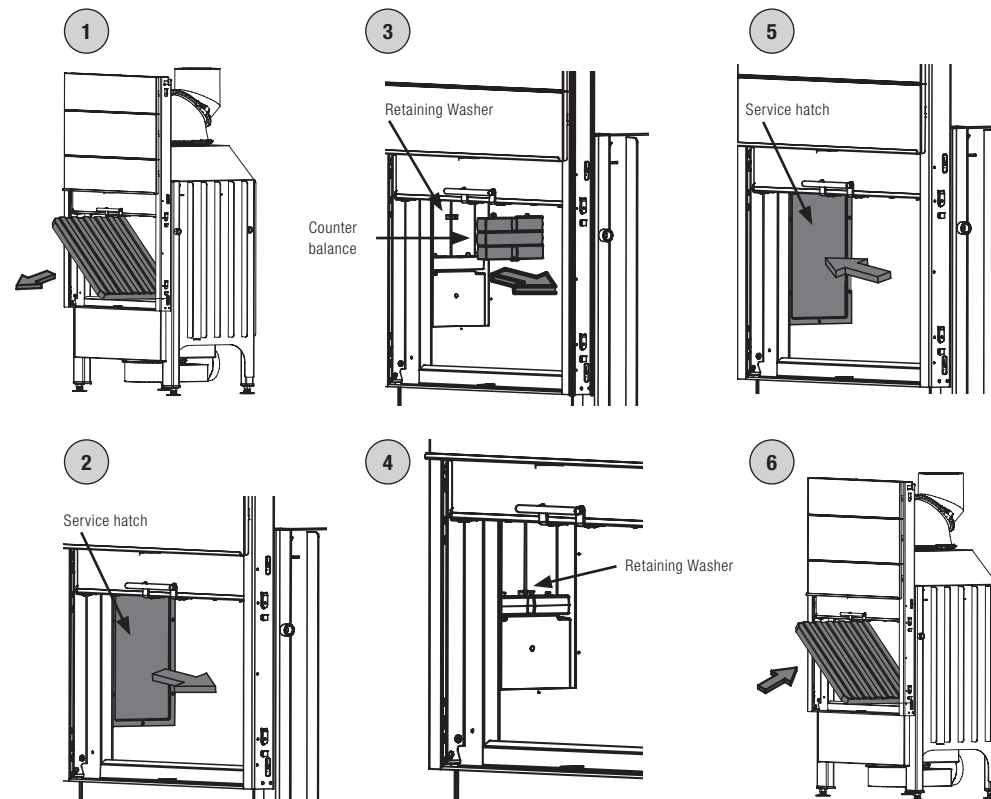
Follow the next steps for BOTH sides:

1. Remove the transport safety device and fasten screws.
2. Pull the weight shaft cover upwards.
3. Release the locking ring (Allen key 2.5). Remove the necessary counter-weights. The number of weights to be removed must be selected in such a manner that the door closes slowly with a constant speed, check the function.
4. Tighten the locking ring (Allen key 2.5).
5. Mount the weight shaft cover and secure with a fastening screw(s).

GB 7

1.2.3 SLIDING DOOR - AFTER INSTALLATION

Conversion from a non-self closing loading door to a self closing loading door. Carry out the fireplace inserts with two weight shafts in the same procedure on both sides!



1.3 ASSEMBLY SEQUENCE

1. For fireplace inserts with a vertical sliding door, first unscrew the transport safety screws which hold the counter weights!
2. If required, use the clamp or the one-hand clamping lock to attach the external combustion air swivel to the adapter in the desired position.
3. The fireplace insert has to stand absolutely level!
4. Horizontal connection to the chimney is possible by rotating the flue gas dome. To do this, open the clamp, put the flue gas dome in position and clamp it in place again.

2. BASIC REQUIREMENTS FOR SETTING UP A FIREPLACE SYSTEM

Before installing the fireplace insert, make sure that the air controls function perfectly and repair if necessary. Consult a local expert to establish the condition of the chimney and combustion air intake before beginning installation. Note and apply DIN 18160 and DIN 18896. The responsible standard DIN EN 13229 must be used. Every fireplace system requires its own chimney. Multiple allocation is only permitted for fireplaces with closing loading door.

In the use of an outer chimney systems, especially when using double stainless steel chimney systems, we recommend the use of an approved draft limiters.

The chimney calculation is based on DIN 4705 T1, T2 or EN 13384-1 with the value triplet specified in these instructions. The fireplace system must be set up as per the professional tiled stoves and ventilation engineer regulations (TROL-Richtlinien).

3. SETUP AND COMBUSTION AIR SUPPLY

3.1 LOCATION OF THE FIREPLACE

Fireplace systems may only be installed in rooms and places in which the location, construction situation and type of use do not lead to hazards. In particular, when the model is dependant on indoor air, sufficient combustion air must flow into the room in which the fireplace is set up. The floor area must be of sufficient size and of a suitable design to allow an open fireplace to be used correctly.

3.2 THE OPERATION OF THE FIREPLACE SYSTEM IS NOT AT DANGER IF

- the chimney system has integrated safety equipment that automatically and reliably prevents the negative pressure in the installation room.
- the required combustion air volume flow and the volume flow of the ventilation system as a whole do not require any greater negative pressures than 0.04 mbar in the installation room and the room and the rooms of the ventilation network.

3.3 DO NOT INSTALL THE FIREPLACE IN THE FOLLOWING LOCATIONS

- in stairways, unless they are in residential buildings with two or fewer flats.
- in hallways with general access.
- in garages.
- in rooms in which highly combustible or potentially explosive substances or mixtures are processed, stored or manufactured in quantities that would be hazardous in the event of ignition or explosion
- fireplace systems in rooms or flats that are ventilated through ventilation systems or warm air heating through the use of fans, unless the safe operation of the fireplace system is ensured.

3.4 Combustion air supply

Room air dependent fireplace systems may only be installed in rooms with a sufficient combustion air supply. A sufficient supply of combustion air to the connection point of the fireplace insert is indispensable for proper function and must be ensured. When doing so, ensure that the combustion air line is sufficiently large and is routed to the fireplace as directly as possible. The combustion air line must be dimensioned according to EN 13884 and must take into account any direction changes and cross section reductions on site.

3.5 COMBUSTION AIR PIPING

In accordance with local regulations (Landesbauordnung) pursuant to Article 37 Paragraph 2 of the German Model Building Code, combustion air piping crossing a fire wall in buildings with more than two fully-sized floors must be installed such that smoke or fire cannot be transmitted to other floors or fire compartments.

NOTE

For information on how to comply with the above-mentioned specifications, see the fire inspection guidelines for the fire prevention requirements of ventilation systems (draft) – January 1984 version.

4. EXHAUST CIRCUIT SHUT-OFF DEVICE

Fireplace systems with Spartherm fireplace inserts may have a cut-off device in the vent. These devices must not be self-closing and must not be positioned such as to prevent or hinder the inspection and cleaning of connecting pipework. The position of the shut-off device must be visible from the outside, e.g., from the position of the operating handle. Shut-off devices may only be installed in the exhaust manifold or collecting pipe, the flue gas pipe stub or the pipeline connecting piece. Instead of cut-off devices, fireplace inserts with combustion chamber doors can have throttle devices.

4.1 FLUE DAMPER

Flue dampers may only be installed in the flue gas pipe stub or pipeline connecting piece. The damper devices must be easy to operate.

5. SPECIAL NOTES ABOUT RLU (ROOM AIR SEALED)

5.1 GENERAL

The fireplace must always be operated with a self-closing door. Modification of the closing device is prohibited!

The fireplace insert may only be installed in rooms whose dimensioning on the air intake side ensures that the operation of air extraction systems does not cause a negative pressure greater than 8 Pa compared to the outside in the installation room, apartment or comparable unit of use.

The joint operation of RLU fireplaces with ventilation systems, extractor hoods or other appliances capable of negative pressure together in the same room or group of rooms shall be established in accordance with the criteria "Joint operation of fireplaces for solid fuels, ventilation devices and air extracting devices" of the Federal Association of Chimney Sweeps (Bundesverband des Schornsteinfegerhandwerks ZIV). The suitability of the RLU fireplace insert for multiple occupancy (several fireplaces in one room or in an air network) is indicated on the type plate.

Tested quality:
The RLU fireplace inserts are type-tested in accordance with EN 13229 as room air sealed fireplace inserts and approved in building supervisory terms by the German Institute of Construction Engineering (Deutsches Institut für Bautechnik). These fireplace inserts therefore satisfy the requirements for room air sealed operation.

THE APPLIANCE COMPLIES WITH THE REQUIREMENTS OF THE CONSTRUCTION PRODUCTS DIRECTIVE. (DECLARATION OF PERFORMANCE IS AVAILABLE AND CAN BE VIEWED AT WWW.SPARTHERM.COM)

The fireplace insert door is equipped with a self-closing door lock. Operation with the combustion chamber door open is not permitted! For safety reasons, the closing device must not be tampered with; furthermore, any such action would render the warranty and operating licence null and void. The guarantee is also rendered invalid if the customer makes technical changes to any other area of the fireplace insert.

5.1.1 CONNECTION CHIMNEY/CONNECTION PIECE

Systems that are connected to conventional flue gas pipes according to DIN EN1856-2 must be checked with special care by the builder of the system for permanent tightness. In this case, the connecting pieces must be sealed at the transitions with permanently resistant sealing material (stove-making putty). These must be connected to the chimney in accordance with DIN EN 1856-2, DIN 18160 or country-specific regulations. It must be ensured that the flue gas pipe is installed in the shortest possible route upwards towards the chimney. The number of bends in the flue gas pipe should be kept to a minimum.

If the flue gas pipe is routed through components with flammable building materials, the flue gas pipe must be insulated as specified in the regulations. The connecting line must always be mounted in such a manner that it is possible to clean and inspect the connecting line at any time. This must be ensured through a sufficient number of cleaning openings. The cover panel of the fireplace insert must be made in such a way that the cleaning and inspection openings are accessible. Observe the manufacturer's instructions for the correct design of the flue gas system!

5.1.2 COMBUSTION AIR SUPPLY ROOM AIR SEALED

The RLU fireplace insert has been developed for use with residential ventilation systems for a vacuum range of up to 8Pa in the installation area and can be operated without additional safety equipment. The combustion air must be supplied in airtight lines from the outside or via an LAS system to the device for room air sealed operation without fail. To do this, the combustion air duct must be permanently sealed to the combustion air neck (connection type rear/side or bottom) of the fireplace insert.

When connecting the RLU fireplace insert to a combustion air line, the TROL instructions (professional regulations) and the stipulations in DIN 18896, etc. must be observed and applied.

In particular, ensure that the dimensions are adequate!

The combustion air openings and lines must not be closed or blocked unless it has been ensured that the fireplace can only be operated with an open lock by means of special safety equipment. The cross-section must not be narrowed by a lock or a grille.

Country-specific and local fire safety regulations must be observed!

6. FIRE PROTECTION ON / IN THE FIRE-PLACE SYSTEM

6.1 SPECIAL PRECAUTIONS FOR FIRE PROTECTION

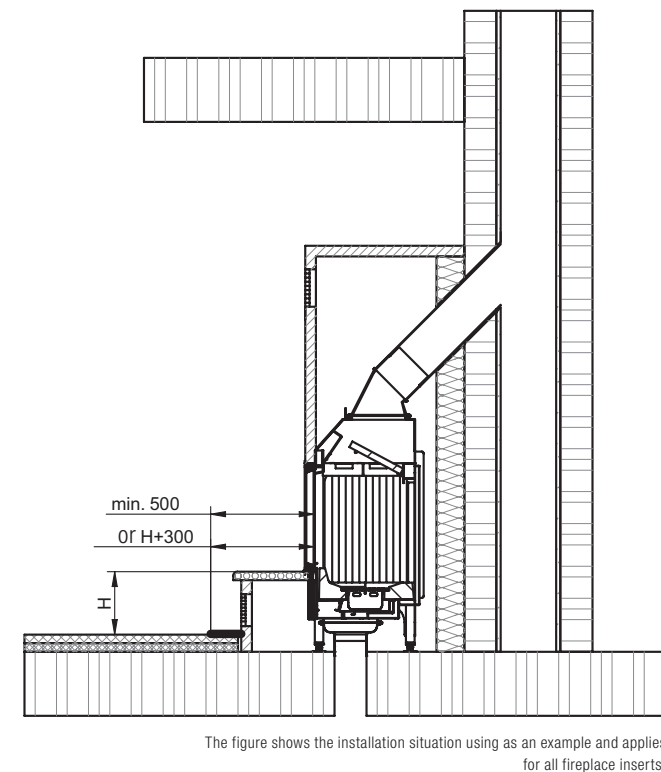
6.1.1 FLOOR COVERINGS NEAR THE FIREPLACE

With a floor covering that is not fireproof made from combustible materials (e.g., carpet, parquet, etc.), a fireproof spark protection covering made from non-combustible material (e.g., respectively loadable glass, natural stone, glazed tiles, tiles, marble, granite or other mineral construction materials) must be installed. If this material is metal, it must have a minimum thickness of 1 mm.

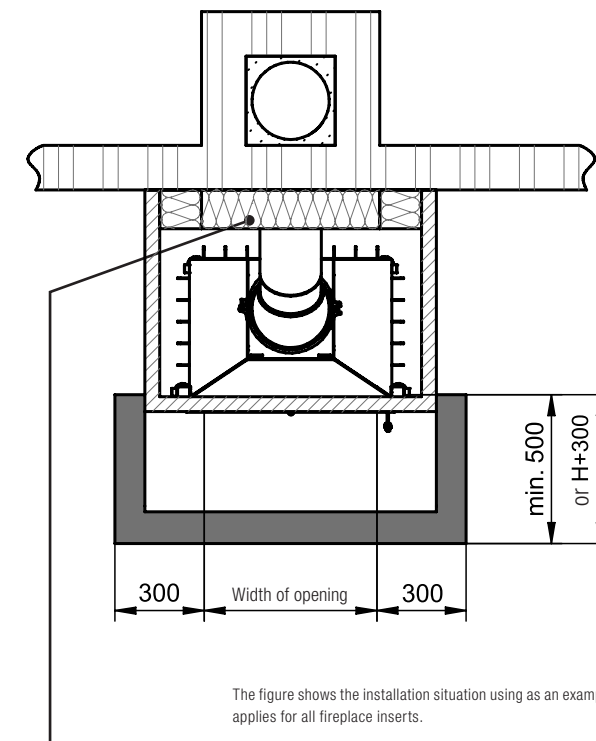
The flooring must be fastened down and secured against sideways movement. In front of fireplaces that are run with closed combustion chamber door the spark protection material needs to cover a surface of 500mm to the front and 300mm to the side.

In front of fireplaces that are run with open combustion chamber door the spark protection material needs to cover a surface corresponding to the height of the combustion chamber base above floor level (H) + 300mm (minimum at least 500mm) to the front and the height of the combustion chamber base above floor level (H) + 200mm (minimum at least 300mm) to the side.

If a log guard (not included) with a height of at least 10 cm is fitted, the minimum distances listed above are sufficient and can be measured from the log guard.

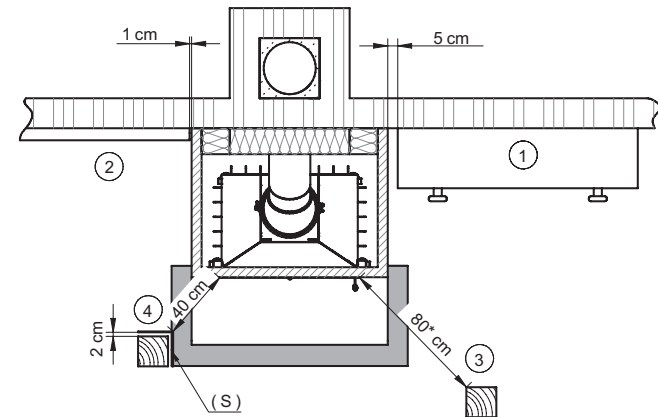


The area starting from the straight area of direct radiant heat of the effective combustion chamber opening must also each be 300 mm to the left and right for protection reasons (see figure).



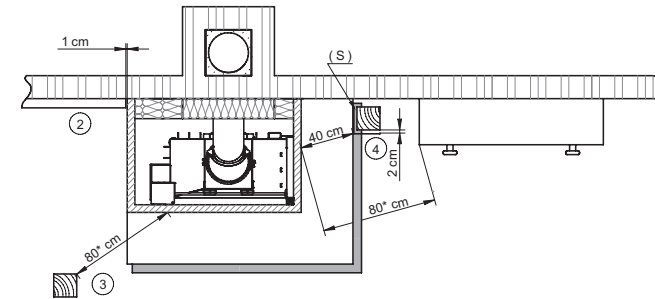
If and how the chimney walls in your installation situation have to be insulated, please consult your responsible stove fitter and the chimney sweeper.

6.1.2 COMBUSTIBLE COMPONENTS



*The minimum clearance required may vary depending on the model

- 1 A distance of at least 5 cm has to be maintained between furniture (e.g., a wardrobe) and the fireplace cladding.
- 2 A clearance of at least 1 cm is recommended for components with small contact areas (wall, floor or ceiling cladding).
- 3 A clearance of at least 80 cm must be maintained between the front and top as well as to the sides of the combustion chamber opening and all flammable fixtures, fittings as well as built-in furniture, unless stated otherwise in component-specific safety instructions.
- 4 A reduced minimum clearance of 40 cm is allowable where ventilated radiant heat protection facilities (S) are provided on both sides. The ventilated distance to the radiant heat protecting device (S) must be at least 2 cm.



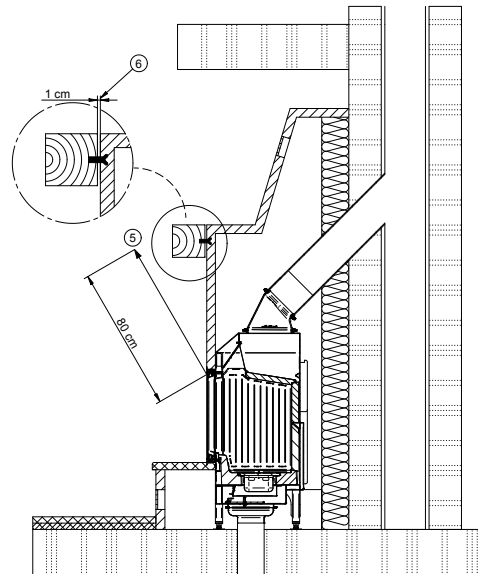
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- 2 A clearance of at least 1 cm is recommended for components with small contact areas (wall, floor or ceiling cladding).
- 3 A clearance of at least 80 cm must be maintained between the front and top as well as to the sides of the combustion chamber opening and all flammable fixtures, fittings as well as built-in furniture, unless stated otherwise in component-specific safety instructions.
- 4 A reduced minimum clearance of 40 cm is allowable where ventilated radiant heat protection facilities (S) are provided on both sides. The ventilated distance to the radiant heat protecting device (S) must be at least 2 cm.

6.1.3 FIREPLACE INSERTS - AREA OF DIRECT RADIANT HEAT

For the distance/radiant heat of the view pane, please refer to „16. Technical Data“ on page 30 of these instructions or, if the information is missing, the technical data of the respective unit in the media portal (www.spartherm.com).

6.1.4 SILL BEAM MADE OF HARDWOOD



The illustration shows an example of an expansion situation and applies as an example for every fireplace insert

5. The sill beam must be located outside the area of direct radiant heat.
 6. A ventilated distance of 1 cm must be guaranteed. For fastening, non-combustible holders must be used, e.g., from metal. These must be arranged and carried out so that the free flow of air is not obstructed.

6.2 CONCRETE AND REINFORCED CONCRETE LOAD-BEARING COMPONENTS

Fireplace systems must be installed so that no load-bearing structural elements made of concrete or reinforced concrete are located within 30 cm of the warm air exit points at the sides and up to a height of 50 cm above the exit points.

6.3 WOODEN BEAMS

Wooden beams may not be installed within the radiation area of the fireplace insert. Air has to circulate around with a minimum distance of 1 cm. Direct anchorage with thermal bridges is not permitted.

6.4 INSULATING LAYERS

(See chapters 7 and 8)

Mineral wool is the insulating material normally referred to in testing institute data and current insulating material regulations. Other suitable insulating materials may be used as an alternative. The materials used must be approved by the DIBt (German Institute of Building Technology) and provided with certificates or marking in confirmation thereof.

6.4.1 INSULATING MATERIAL THICKNESS

Details for the insulating material thickness can be found under chapter „16. Technical Data“ on page 30.

The minimum insulation thicknesses to protect combustible materials are only valid for insulation materials with a thermal transmittance value (U-value) $\geq 0.4 \text{ W/m}^2\text{K}$. From a U-value $< 0.4 \text{ W/m}^2\text{K}$, additional measures must be made for fire protection (see DIN 18896:2013-12).

Mats, sheets or shells of silica-based insulation material (stone or slag and

ceramic fibres) of material class A1 as per DIN 4102, part 1 with an upper application limit temperature of at least 700°C when measured as per DIN 52271 and a rated gross density of 80 kg/m^3 are to be used to produce the insulating layers (see Special information on insulation of the mounting wall/side wall). When using insulating materials of this type, ensure they are provided with an AGI-Q 132 code number.

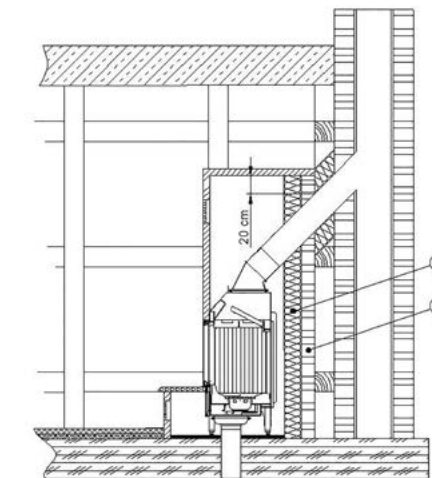
The code number of the insulating material used must not, however, contain the code sequence "99"! Where the insulating layer is not held in place by walls, cladding or plating, it should be pinned into position at a maximum distance of 33 cm between the pins. Other insulation materials, e.g., gas concrete or mineral construction materials, must be approved by the German Institute of Building Technology in Berlin (DIBt). It has to be installed according to the manufacturer's instructions.

The individual insulation materials have different coefficients of thermal conductivity which means the insulation material thicknesses will vary. The required insulation material thickness can be taken from the diagram provided by the insulation material manufacturer.

Some thermal insulation materials can be used as a protective and insulation at one and the same time. This significantly reduces installation depth. Thermal insulation made of non-abrasive material such as, e.g., stone and slag fibre must be abrasion-resistant, e.g., with steel plate cladding, so that the recirculating air does not transport insulation particles into the room. Other thermal insulation sheets leave the factory with added abrasion resistance as required. This type of insulation material may only be installed offset and all joints must be sealed. Where multiple insulation layers are required, the joints should be arranged to overlap. The installation must be correct and abrasion-resistant. Moreover, the exact position must be permanently ensured.

6.4.2 PROTECTING THE MOUNTING WALL WITH A STUD WALL

- A protective wall must be constructed when installing a wall-mounted fireplace system. The stud wall must protrude at least 20 cm above the connecting piece?
- A protective wall is not needed, where the walls of the building are:
 - at least 11.5 cm thick
 - made from non-combustible components
 - is not a bearing concrete or reinforced concrete wall
- Protective walls are normally of brick construction, but may also be constructed from the heat-insulating panels referred to above, in order to reduce the total thickness of the protective wall and insulating material.



8 Insulation of the heating chamber using, e.g., dimensionally stable mineral wool according to the heat insulation thickness technical data.

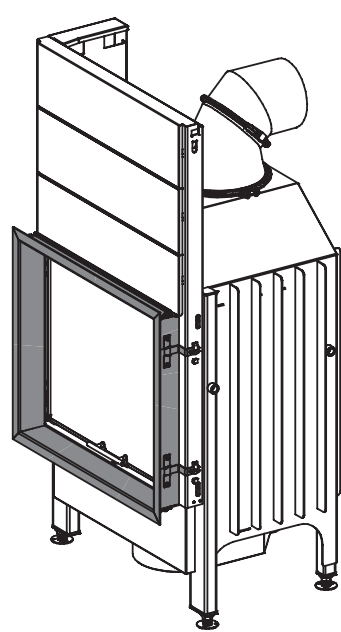
23 Stud wall, 10 cm thick*

* If necessary, use a substitute insulation material (e.g. calcium silicate) in the place of front-mounted masonry and insulation (point 8), in accordance with the technical data provided by the manufacturer.

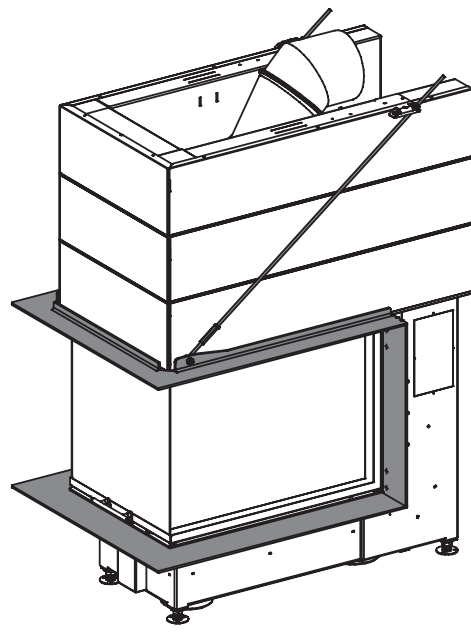
7. INSTALLATION GUIDELINES

7.1 IMPORTANT INFORMATION FOR WINDOW FRAME INSTALLATIONS

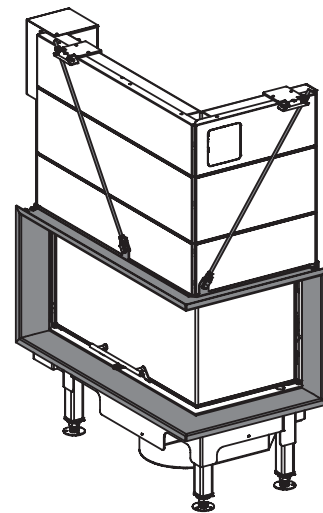
Generally, a difference is made in slide on frames and self-supporting frames (solid and folded edge version).



Slide on frame (TV fireplace inserts only)



Self-supporting solid frame

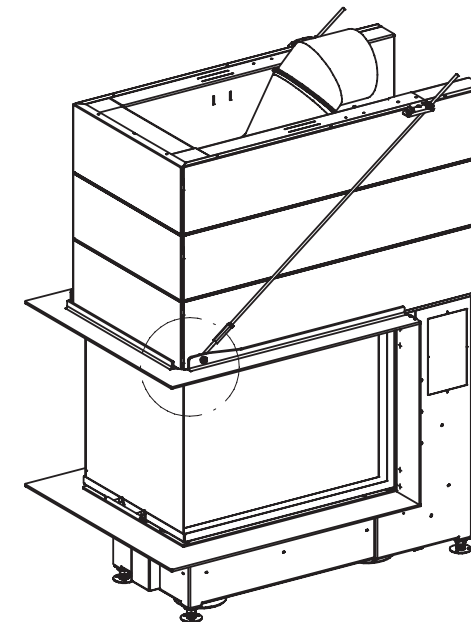
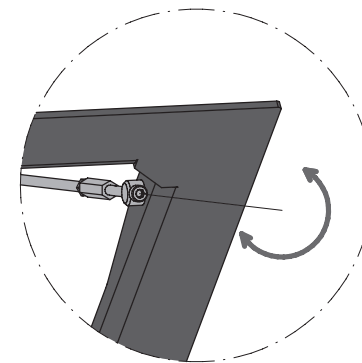


Self-supporting folded edge frame

After completing the hollow chimney breast, slide on frames can be pushed on and create a clean transition from the fireplace opening to the fireplace. When installing the fireplace take care that sufficient space is considered for mounting the slide on frame!

No cladding material may be mounted on slide on frames! A supporting frame must be installed to carry the weight of the cladding.

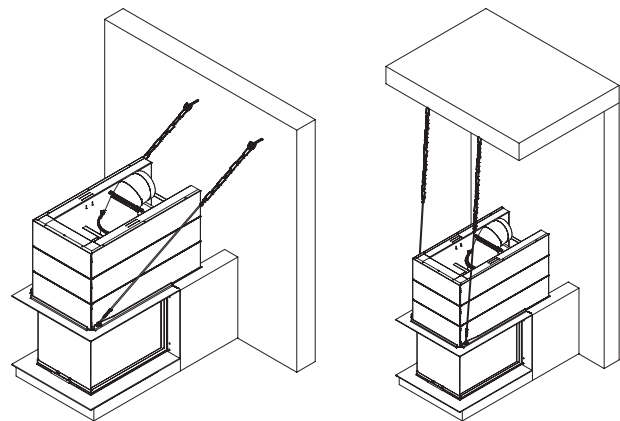
Self-supporting frames are fixed to the fireplace and are suitable for direct wall mounting. In doing so, the maximum weight load to be applied is 200 kg. Depending on the combustion chamber type, you have the possibility to readjust the frame when installed in order to, e.g., compensate settlements.



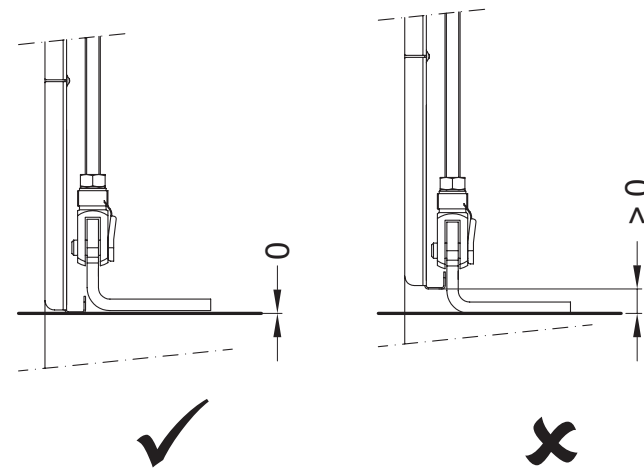
We recommend that insulation material, e.g., fibre glass ceramic or 2 mm fibre glass paper is inserted between the self-supporting frame and the body of the fireplace. This allows minor thermal expansion of the fireplace insert to be compensated.

Hollow chimney breasts with self-supporting frames should always be created with fibre glass grating / expansion joints in order to reduce the risk of expansion cracks!

For large and heavy chimney breasts, the self-supporting frame must be fastened on site. For this purpose, the connecting rod must be released from the fireplace insert and secured to the body wall or on the ceiling. You can use e.g., impact anchors in combination with links made of steel for this, depending on the wall construction.



The alignment of the frame should be carried out using a spirit level. During assembly and creating the chimney breast, take care that the supporting frame and frame are not positioned lower than the door hood of the fireplace insert. For cleaning purposes, check the ability to slide or pivot the loading door. **The loading door must be able to be moved freely and open without resistance.**



7.2 EXPANSION GAP BETWEEN THE CASING AND THE FIREPLACE INSERT

There must be no direct connection between the fireplace insert and the casing. An expansion joint must be provided and sealed by means of an appropriate sealing strip. Please note that there must be a minimum distance of 6 mm between the door frame and the fireplace hood/installation frame in order to be able to disassemble the fireplace insert door if necessary (e.g. replace the pane).

7.3 FIREPLACE MANTEL

A fireplace mantel must never be connected directly to the fireplace insert. The apron must be self-supporting. Please note that there must be a minimum distance of 6 mm between the door frame and the fireplace hood/installation frame in order to be able to disassemble the fireplace insert door if necessary (e.g. replace the pane).

7.4 CONNECTING PIECE

The neck tube for the connection piece is on the flue dome of the fireplace insert. The connection to the chimney must be carried out as directly as possible and can be established vertically as well as horizontally. Connection of the chimney must be carried out using a wall lining in the brickwork, or arranged according to the specifications of the flue manufacturer. Connecting pieces for house chimneys are made to shape from fire-clay or steel piping (2 mm sheet steel according to DIN 1623, DIN 1298 and DIN EN 1856 is normally used).

NOTE

Requirements to the connecting piece in accordance with DIN 18160 Part 2.

7.5 HEAT DISSIPATION

Since it is possible to have different installation configurations with our fireplace inserts, it is essential to consult a professional company when planning a fireplace setup.. Make sure that the level of heat dissipation is sufficient. This can be achieved by using convection air ducts in the cladding, via heat-dissipating cladding elements or using a combination of both.

7.5.1 HOT AIR SYSTEMS

Fireplace systems designed to transfer heat generated by convection (stoves, fireplaces, etc.) must comply with the following points:

- The cross-section for the air inlet opening and for the air outlet opening must be obtained from the technical data. Deviating cross-sections are possible on calculated verification.
- Convection air jackets must be attached at all four connecting stubs. It must not be possible to close the air inlet and air outlet openings.
- Air circuit pipes must be manufactured from a non-flammable, non-deformable material.
- No flammable objects or materials (wooden ceiling components, furniture) may be positioned within an area 30 cm to the side of, and 50 cm above the system hot air discharge grilles.

7.5.2 FIREPLACE SYSTEMS WITH A CLAY LINED CHIMNEY

Spartherm fireplace inserts that are tested according to EN 13229 are suitable to connect to a clay lined chimney. The dimensioning and the layout of clay lined chimney must be carried out according to applicable set of rules.

Make sure the clay lined chimney has the right dimensions and creates sufficient draft in combination with the fireplace insert.

The stove fitter must inform the operator about the mode of operation and the correct handling of the fireplace system.

7.5.3 CLOSED FIREPLACE SYSTEM CASING

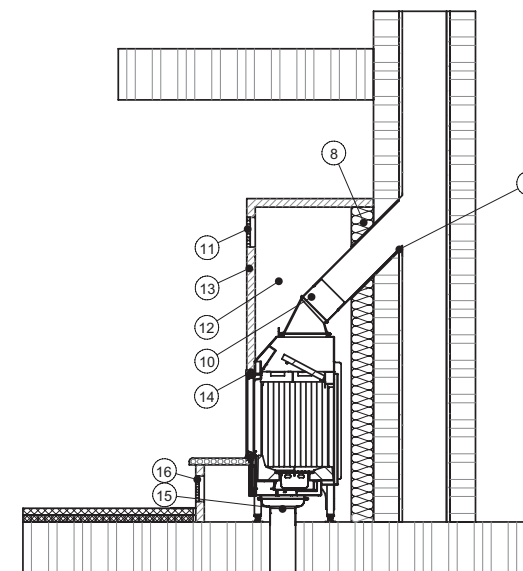
Systems, in which heat dissipation is transmitted across the external surfaces of the fireplace (stoves, hypo-caustic units, devices with closeable convection air openings, etc.), i.e. to the surroundings via radiation from the casing surfaces, must comply with the following:

- The fireplace system must be designed and installed in accordance with KL industry specifications (TROL).
- We recommend the use of sufficient storage material (e.g. Magnetherm), in order to guarantee optimal heating and prevent over-heating due to temperature peaks.
- Stove dimensions, i.e. the size of the heat-transmitting surfaces, will be dependent on thermal output and heating requirements!
- Fireplace casing components must be selected to meet the heightened requirements.
- The installer is obliged to inform the operator (preferably in writing) of any special constructional or operating features. The amount of wood used must correspond to the heat-transmitting properties of the surface and the storage capacity of the storage medium (as a general rule, the fire should not need refuelling more than 2 - 3 times per day).
- It is recommended, that contacting surfaces manufactured from flammable substances be protected by ventilation.
- In systems fitted with sliding firebox doors, the guide roller and bearing temperature must not exceed 270°C. Wherever possible, the area around the fireplace insert should be insulated separately by means of moveable mechanical components.
- When fitting components, ensure that the manufacturer's installation guidelines are strictly adhered to, especially in respect of allowable operating or ambient temperature and (wherever possible) accessibility.

8. GENERAL INSTALLATION INSTRUCTIONS FOR INSTALLATION SPACES MADE FROM NON-COMBUSTIBLE CONSTRUCTION MATERIALS

Important note: fireplace inserts must not be mounted on floating floor screed, these must be mounted on composite screed with sufficient load-bearing capacity. There must be a cleaning opening for the exhaust pipe in the chimney cladding and with the respective products, water, heating and power connections must be provided!

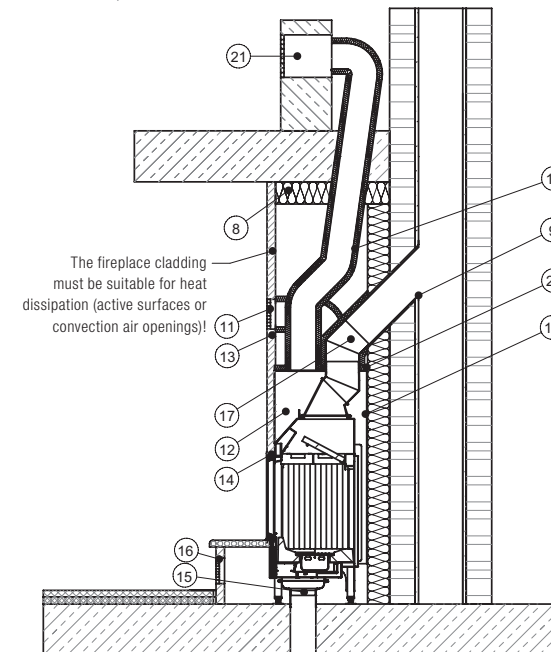
8.1 FLOORS AND WALLS



The figure shows the installation situation as an example and applies as an example for all fireplace inserts.

- 8 Insulation of the heating chamber according to the heat insulation technical data.
- 9 If necessary, wall sleeve with sealing cord
- 10 Exhaust pipe (connecting piece)
- 11 Supply air grille (hot are outlet) The position must be selected in such a manner, that a distance of 500 mm is between the top edge of the grille and the ceiling..
- 12 Chimney breast
- 13 Chimney system cladding made from non-combustible construction material
- 14 Mounting frame with insulation strips
- 15 Separate combustion air connection
- 16 Air circulation grille (cold air supply)

8.2 FLOORS, WALLS AND CEILING



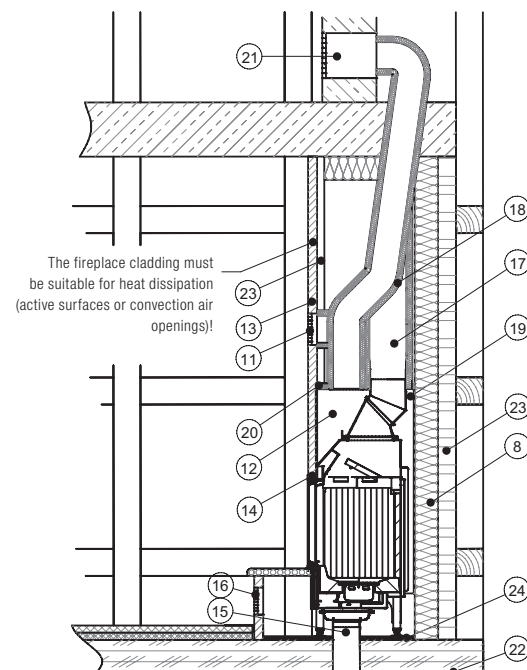
The fireplace cladding must be suitable for heat dissipation (active surfaces or convection air openings)!

The figure shows the installation situation as an example and applies as an example for all fireplace inserts.

- 8 Insulation of the heating chamber all-round according to the heat insulation technical data.
- 9 If necessary, wall sleeve with sealing cord
- 11 Supply air grille (hot are outlet) The position must be selected in such a manner, that a distance of 500 mm is between the top edge of the grille and the ceiling.
- 12 Chimney breast
- 13 Chimney cladding made from non-combustible construction material
- 14 Mounting frame with insulation strips
- 15 Separate combustion air connection
- 16 Air circulation grille (cold air supply)
- 17 flue gas pipe (connecting piece)
- 18 Convection air housing
- 19 Top insulation of the convection air housing min. 3 cm
- 20 Observe the air return!
- 21

9. GENERAL INSTALLATION INSTRUCTIONS FOR INSTALLATION SPACES MADE FROM COMBUSTIBLE CONSTRUCTION MATERIALS

9.1 FLOORS, WALLS AND CEILING



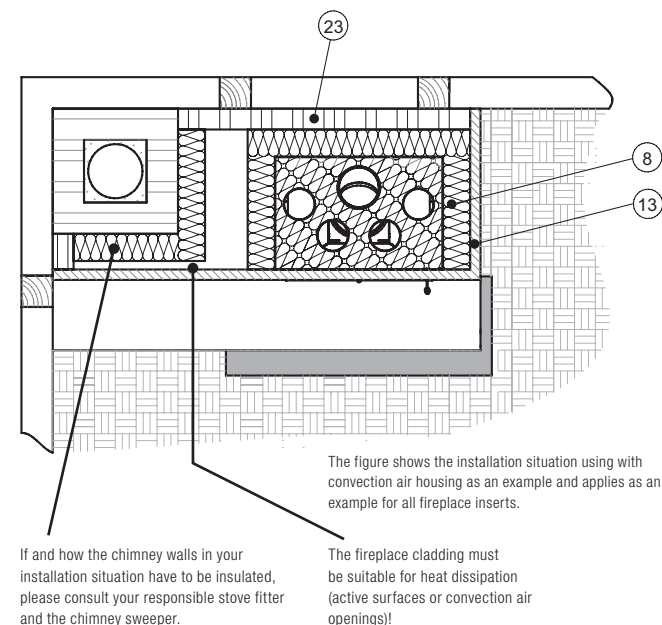
The figure shows the installation situation using with convection air housing as an example and applies as an example for all fireplace inserts.

- 8 Insulation of the heating chamber using, e.g., dimensionally stable mineral wool according to the heat insulation thickness technical data.
- 11 Supply air grille (hot air outlet) The position must be selected in such a manner, that a distance of 500 mm is between the top edge of the grille and the ceiling.
- 12 Heating chamber
- 13 Chimney cladding made from non-combustible construction material
- 14 Mounting frame with insulation strips
- 15 Separate combustion air connection
- 16 Air circulation grille (cold air supply)
- 17 Insulated flue pipe (connecting piece) with at least 3 cm thick dimensionally stable mineral wool
- 18 Insulation of the connecting lines with at least 3 cm thick dimensionally stable mineral wool
- 19 Convection air housing made of steel plate
- 20 Top insulation of the convection air housing min. 3 cm
- 21 Observe the air return!
- 22 Combustible construction material (wooden floor)
- 23 Protective wall, 10 cm thick*
- 24 Floor protection covering within the heating chamber made from non-combustible material as long as no insulation is necessary according to the heat insulation thickness of the technical data!

* If necessary, use a substitute insulation material (e.g. calcium silicate) in the place of front-mounted masonry and insulation (point 8), in accordance with the technical data provided by the manufacturer.

9.2 INSULATION

Special measures for fire protection with combustible construction materials (flooring and / or mounting walls) relating to the insulation.



- 8 Insulation of the convection air housing all-around using, e.g., dimensionally stable mineral wool according to the heat insulation thickness technical data.
- 13 Chimney cladding made from non-combustible construction material
- 23 Stud wall, 10 cm thick*

* If necessary, use a substitute insulation material (e.g. calcium silicate) in the place of front-mounted masonry and insulation (point 8), in accordance with the technical data provided by the manufacturer.

10. CLEANING THE FIREPLACE SYSTEMS

Fireplace systems must be designed in such a manner that the air inlets and air outlets can easily be cleaned and the distance area to the ceiling, the walls and built-in furniture can be viewed easily and kept free. The service openings must always be installed easy to access so that cleaning is not made difficult.

11. MAINTENANCE

The door must be checked regularly for function and the door seal visually for integrity. This seal must be replaced if necessary (in case of wear, breakage, etc.). The combustion chamber lining must be checked at regular intervals. It is made of a natural product that expands and contracts with every heating process. This may lead to cracks. As long as the combustion chamber lining maintains its position in the combustion chamber and does not break, it is fully functional.

To ensure proper functioning, it is essential that an annual (if possible before the heating season) maintenance of the fireplace insert be carried out by a specialist! The fireplace must never be modified! Only original spare parts that have been approved by the manufacturer may be used! If you have any questions, please contact your specialist dealer!

12. SPECIAL INFORMATION FOR SPARTHERM FIREPLACE INSERTS

12.1 FLUE GAS OUTLET

The flue gas outlet can be turned. It can be connected to the chimney vertically as well as horizontally. For connecting to the side, there is a 90° flue gas dome and a favourable 0 degree flue gas dome available in the delivery program.

12.2 FIREPLACE INSERT WITH VERTICAL SLIDING DOOR

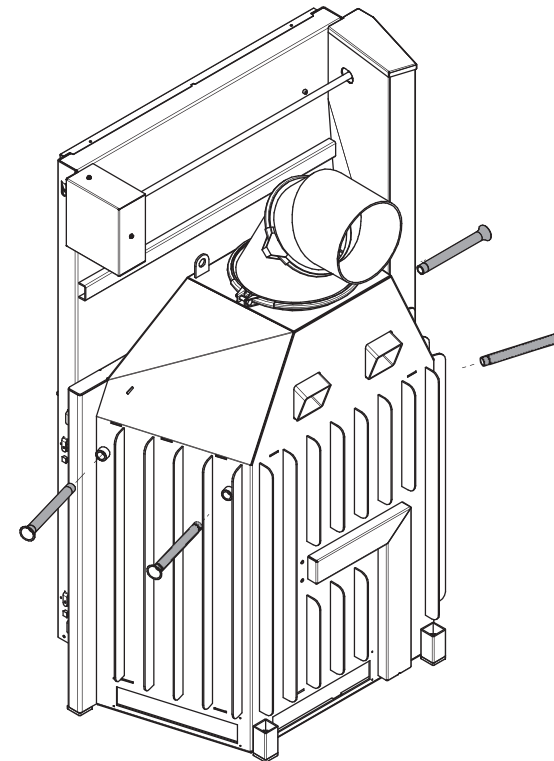
Completely remove the transport safety device before installing.

Check the function of the sliding loading door before the cladding is mounted on the fireplace insert.



12.3 CARRYING AIDS

Certain fireplace inserts are prepared for the use of carrying aids.



* only complies with 15a 2015 w. AT att., attention: Flue gas conn. height + 160 mm · NSHF = heat recovery surface 71 behind H₂O S = Unit additionally tested with low power
*** Example SILCA 250KM: approved replacement insulation mat. acc. to DIBt No. Z-43.14-117 and CE 0432-CPD-420002242/2-6

13. DISASSEMBLY

13.1 SAFETY INFORMATION FOR DISASSEMBLY

WARNING! Danger due to non-adherence to disassembly instructions!

Incorrect disassembly of the unit may lead to severe injuries. this chapter contains important information for safe disassembly of the unit.

- Carefully read this chapter prior to disassembly.
- Adhere to the safety information.
- perform the disassembly work as described.

Only qualified personnel may disassemble the unit. electrical work may only be performed by qualified electricians.

To prevent danger, always adhere to the following requirements:

- The unit and other parts that you may come in contact with have cooled down for a sufficient period (e.g. several days).
- No heat or glowing embers remain in the firebox.
- The surroundings of the stove system are protected, e.g. by means of covers for the floor and furniture.

Prior to disassembly, clean the unit and the stove system. For cleaning work, remove the baffle plate from the firebox.

13.2 DISMANTLING THE UNIT

- Remove all connections between the stove system and the chimney.
- Remove all pipes from the flue gas routing system.
- If installed, remove all pipes from the combustion air line.

14. DISPOSAL

14.1 DISPOSING OF THE PACKAGING

ATTENTION! Risk of environmental damage caused by improper disposal of the packaging!

- Do not dispose of the packaging with the normal household waste.
- Ensure that the packaging is recycled in a proper, environment-friendly manner.

The packaging is intended to protect the unit from transport damage. the packaging materials have been selected based on their environment-friendly characteristics and are made of recyclable materials. the packaging materials can be returned to the raw material cycle after use.



14.2 DISPOSING OF THE UNIT

ATTENTION! Risk of environmental damage caused by improper disposal of the unit!

- Do not dispose of the unit with the normal household waste.
- Ensure that the unit is recycled in a proper, environment-friendly manner

Dispose of the unit according to the legal regulations through a specialised disposal company or your local disposal facilities.



15. APPENDIX

15.1 ACCESSORIES

Combustion control S-Thermatik Neo

Secondary air control S-Kamatik 2

Electric door lift SESAM III (or opening and closing the firebox door)

Warm air fan S-Vent

Underpressure control S-USI II

Heat accumulator: Thermobox, Helix, Aufsatzaggregat, eboris-akku

If required and for additional information (e.g. brochures, spare parts, price lists): Please contact the manufacturer or a specialist shop.

www.spartherm.com

You can find warranty conditions at www.spartherm.com

15.2 STANDARDS AND REGULATIONS

Relevant regulations – without claim to completeness:

- **FeuVo:** Firing installation regulation of the respective german state.
- **LB0:** State construction regulations or fire protection regulations.
- **VKF:** Association of Fire insurances of the Cantons (Switzerland).
- **LRV:** Clean air act (switzerland).
- **1.BImSchV:** First directive for implementation of the german Federal immission Control Act.
- **TROL:** professional regulations of the tiled stove and air heater construction trade (ZVsHK).
- **DIN 1298 / DIN EN 1856:** Connecting flue pipes for heat generating systems.
- **DIN EN 13229:** Fireplace inserts fired by solid fuel.
- **DIN 18896:** Fireplaces fired by solid fuel. technical specifications for installation and operation.
- **DIN EN 13384:** Calculation methods for chimneys.
- **DIN 18160-1/2:** Flue gas systems/chimneys.
- **DIN 4751 / DIN EN 12828:** Heating systems in buildings - design for water-based heating systems.
- **VDI 2035:** Water treatment for heating systems.
- **Art. 15a:** Federal Constitutional law (Austria).

15.3 DECLARATIONS OF CONFORMITY

The design and operating behaviour of this product complies with the european directives and the additional national requirements. this compliance is certified by the Ce label.

A declaration of performance in line with directive EU 305/2011 s available on the manufacturer's website:

<https://www.spartherm.com>

16. TECHNICAL DATA

		Mini R1V	Mini R1V NSHF	Mini Z1	Mini Z1 NSHF	Mini S	Mini Sh	Varia 1V 51	Varia 1V 57	Varia 1V 51 NSHF	Varia 1V 57 NSHF	Varia 1Vh 51
General data	Energy efficiency class	A	A+	A	A+	A	A	A+	A+	A+	A+	A+
	Nominal heat output	kW	5.2	6.2	7.0	10.0	7.0	11.0	11.0	17.0	17.0	11.0
	Output range	kW	4.5-6.8	4.5-8.1	4.9-9.1	7.0-13.0	4.9-9.1	7.7-14.3	7.7-14.3	11.9-21.2	11.9-21.2	7.7-14.3
	Efficiency	%	80	>85	>78	>85	>78	>78	>80	>80	>85	>80
	Rec. chimney diameter	mm	180	180	180	180	180	200	200	200	200	200
	Flue gas connection Ø	mm	–	–	–	–	–	180	180	180	180	180
	Weight (approx.)	kg	121	121	164	164	142	175	242	248	248	282
	Rec. min. cross section for circ./incom. air (with WLM)cm²		700	–	700	–	700	700	700	–	–	700
	Rec. min. cross section for circ./incom. air (without WLM) cm²		780/850	970/930	950/1140	1360/1640	810/980	1420/1710	1420/1710	1420/1710	1420/1710	1420/1710
Tests and values	Non-self-closing fire door (Design A)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Self-closing fire door (Design A1)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Operation with open combustion chamber door		–	–	✓	–	✓	–	–	–	–	–
	Level 2 BlmSchV. 2010		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	15a B-VG		✓	✓	✓*	✓	✓*	✓	✓	✓	✓	✓
	Ecodesign 2022		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Triple value for open firebox	DIBt admission		–	–	–	–	–	–	–	–	–	–
	Flue gas mass flow	g/s	–	–	20.9	–	17.8	–	–	–	–	–
	Flue gas temperature (on flue gas connection)	°C	–	–	240	–	230	–	–	–	–	–
	Flue gas temperature downstream of NSHF	°C	–	–	–	–	–	–	–	–	–	–
	Combustion air requirement	m³/h	–	–	60.1	–	85.8	–	–	–	–	–
	Rec. supply pressure	Pa	–	–	10	–	10	–	–	–	–	–
Triple value for closed firebox	Flue gas mass flow	g/s	4.7	6.0	7.5	7.6	8.8	8.8	8.1	7.6	12.4	8.1
	Flue gas temperature (on flue gas connection)	°C	358	355 ∇ 164	330	470 ∇ 240	290	290	335	315	337 ∇ 208	365 ∇ 235
	Rec. supply pressure	Pa	12	12	14	14	14	14	12	12	12	12
	CO ₂	%	9.8	8	8.6	11.1	7.9	7.9	12.1	12.6	11.1	12.1
	Rec. diameter according to M-FeuVo	cm	15	15	15	15	15	15	15	15	15	15
	Combustion air requirement	m³/h	16.2	21.4	25.5	25.2	27.6	27.1	25.7	42.6	43.2	27.1
Distances – Heating chamber	From wall	cm	9	11	10	11	10	10	8	8	8	8
	From floor	cm	–	–	–	–	–	–	0	0	19	0
Distance in radiant heat area of pane	Front	mm	800	800	800	800	800	800	1900	1900	1800	1900
	Side	mm	–	–	–	–	–	–	–	–	–	–
	Back	mm	–	–	–	–	–	–	–	–	–	–
Heat insulation (example rock wool mat acc. to AGI-Q 132)	Installation floor	cm	0	0	–	–	–	–	–	0	0	–
	Installation wall	cm	9	9	6	6	6	6	12	12	12	12
	Side wall	cm	9	9	6	6	6	6	12	12	12	12
	Ceiling	cm	–	–	–	–	–	–	–	–	–	–
	Additional walling for wall protection	cm	10	10	10	10	10	10	10	10	10	10
	Installation floor	cm	0	0	–	–	–	–	–	0	0	–
Replacement insu- lation mat. Calcium silicate ***	Installation wall	cm	8	8	5	5	5	5	10	10	10	10
	Side wall	cm	8	8	5	5	5	5	10	10	10	10
	Ceiling	cm	–	–	–	–	–	–	–	–	–	–
	Convection	%	62	62	68	68	60	58	54	56	54	54
Heat distribution	Pane	%	38	38	32	32	40	42	46	44	46	46
	H ₂ O	%	0	0	0	0	0	0	0	0	0	0

* only complies with15a 2015 w. AT att., attention: Flue gas conn. height + 160 mm · NSHF = heat recovery surface ∇ behind  H₂O S = Unit additionally tested with low power
*** Example SILCA 250KM: approved replacement insulation mat. acc. to DIBt No. Z-43.14-117 and CE 0432-CPD-420002242/2-6

		Varia 1Vh 57	Varia 1Vh 51 NSHF	Varia 1Vh 57 NSHF	Varia 1V-87h	Varia 1V-87h NSHF	Varia 1V-100h	Varia Sh	Varia AS	Varia AS NSHF	Varia ASh	Varia ASh NSHF
General data	Energy efficiency class	A+	A+	A+	A+	A+	A	A+	A+	A+	A+	A+
	Nominal heat output	kW	11.0	17.0	17.0	9.5	10.9	10.4	11.0	7.0	11.0	11.0
	Output range	kW	7.7-14.3	11.9-21.2	11.9-21.2	6.7-12.4	7.6-14.2	7.3-13.5	7.7-14.3	4.9-9.1	7.7-14.3	4.9-9.1
	Efficiency	%	>80	>85	>85	>80	>85	80	80	>80	>85	>80
	Rec. chimney diameter	mm	200	200	200	200	200	250	200	180	180	180
	Flue gas connection Ø	mm	180	180	180	250	250	200	180	–	–	–
	Weight (approx.)	kg	288	282	288	350	350	394	272	166	166	209
	Rec. min. cross section for circ./incom. air (with WLM)cm²		700	–	–	700	–	700	700	–	700	–
	Rec. min. cross section for circ./incom. air (without WLM) cm²		1420/1710	1420/1710	1420/1710	1280/1300	1280/1300	1200/1500	1550/1860	1200/1000	1200/1000	1200/1000
Tests and values	Non-self-closing fire door (Design A)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Self-closing fire door (Design A1)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Operation with open combustion chamber door		–	–	–	–	–	–	–	–	–	–
	Level 2 BlmSchV. 2010		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	15a B-VG		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ecodesign 2022		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Triple value for open firebox	DIBt admission		–	–	–	–	–	–	–	–	–	–
	Flue gas mass flow	g/s	–	–	–	–	–	–	103	–	103	–
	Flue gas temperature (on flue gas connection)	°C	–	–	–	–	–	–	117	–	117	–
	Flue gas temperature downstream of NSHF	°C	–	–	–	–	–	–	–	–	–	–
	Combustion air requirement	m³/h	–	–	–	–	–	–	88.9	–	88.9	–
	Rec. supply pressure	Pa	–	–	–	–	–	–	11	–	11	–
Triple value for closed firebox	Flue gas mass flow	g/s	7.6	12.4	12.4	9.0	10.5	11.4	9.5	7.0	9.6	7.0
	Flue gas temperature (on flue gas connection)	°C	315	337 ∇ 208	365 ∇ 235	275	296 ∇ 180	275	300	275	347 ∇ 197	275
	Rec. supply pressure	Pa	12	12	12	12	12	12	11	12	12	12
	CO ₂	%	12.6	11.1	11.1	9.5	8.7	7.9	10.1	8.4	8.8	8.4
	Rec. diameter according to M-FeuVo	cm	15	15	15	15	15	15	15	15	15	15
	Combustion air requirement	m³/h	25.7	42.6	43.2	29.7	34.6	40	33.1	25	35.1	25
Distances – Heating chamber	From wall	cm	8	8	8	12	11	20	10	10	10	10
	From floor	cm	0	19	19	26.5	21	7	–	–	–	–
Distance in radiant heat area of pane	Front	mm	1900	1800	1800	2300	2200	2400	800	1400	1400	1400
	Side	mm	–	–	–	–	–	–	–	–	–	–
	Back	mm	–	–	–	–	–	–	–	–	–	–
Heat insulation (example rock wool mat acc. to AGI-Q 132)	Installation floor	cm	–	0	0	0	4	0	0	0	0	0
	Installation wall	cm	12	12	12	17	12	12	8	10	10	10
	Side wall	cm	12	12	12	12	12	12	6	10	10	10
	Ceiling	cm	–	–	–	4	4	–	–	–	–	–
	Additional walling for wall protection	cm	10	10	10	10	10	10	10	10	10	10
	Installation floor	cm	–	0	0	0	4	0	0	0	0	0
Replacement insu- lation mat. Calcium silicate ***	Installation wall	cm	10	10	10	14	10	10	7	9	9	9
	Side wall	cm	10	10	10	10	10	10	5	9	9	9
	Ceiling	cm	–	–	–	4	4	–	–	–	–	–
	Convection	%	56	54	56	50	50	61	58	59	59	59
Heat distribution	Pane	%	44	46	44	50	50	39	42	41	41	41
	H ₂ O	%	0	0	0	0	0	0	0	0	0	0

* only complies with15a 2015 w. AT att., attention: Flue gas conn. height + 160 mm · NSHF = heat recovery surface ∇ behind  H₂O S = Unit additionally tested with low power
*** Example SILCA 250KM: approved replacement insulation mat. acc. to DIBt No. Z-43.14-117 and CE 0432-CPD-420002242/2-6

		Varia Ah	Varia Bh	Varia Bh S	Varia B-120h	Arte 1Vh-66	Arte 1Vh-66 NSHF	Arte Bh	Mini S-FDh	Varia FD	Varia FDh 51	Varia FDh 57
General data	Energy efficiency class	A	A	A	A	A+	A+	A	A	A	A	A
	Nominal heat output	kW	10.4	10.4	9.0	15.0	6.6	10.4	11.0	6.0	11.6	11.6
	Output range	kW	7.3-13.5	7.3-13.5	6.3-11.7	10.5-19.5	4.6-8.6	7.3-13.5	7.7-14.3	4.5-7.8	8.1-15.1	8.1-15.1
	Efficiency	%	>80	>78	>78	78	>85	>85	>78	>78	80	80
	Rec. chimney diameter	mm	200	250	250	250	180	180	200	250	250	250
	Flue gas connection Ø	mm	180	200	200	–	–	–	180	180	–	–
	Weight (approx.)	kg	305	350	350	369	243	243	287	266	212	265
	Rec. min. cross section for circ./incom. air (with WLM)cm²	700	700	700	700	700	–	700	700	700	700	700
	Rec. min. cross section for circ./incom. air (without WLM) cm²	1410/1690	1270/1520	1270/1520	1600/1910	770/970	770/970	1230/1480	640/770	1270/1060	1270/1060	1270/1060
Tests and values	Non-self-closing fire door (Design A)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Self-closing fire door (Design A1)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Operation with open combustion chamber door	–	–	–	–	–	–	–	✓	–	–	–
	Level 2 BlmSchV. 2010	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	15a B-VG	✓	–	✓*	–	✓	✓	✓*	✓*	✓	✓	✓
	Ecodesign 2022	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Triple value for open firebox	DIBt admission	–	–	–	–	–	–	–	–	–	–	–
	Flue gas mass flow	g/s	36.2	–	–	–	–	22.4	23.8	–	–	–
	Flue gas temperature (on flue gas connection)	°C	260	–	–	–	–	260	280	–	–	–
	Flue gas temperature downstream of NSHF	°C	–	–	–	–	–	–	–	–	–	–
	Combustion air requirement	m³/h	126.2	–	–	–	–	151.3	171.5	–	–	–
Triple value for closed firebox	Rec. supply pressure	Pa	10	–	–	–	–	10	9	–	–	–
	Flue gas mass flow	g/s	8.5	9.5	8.5	15.4	5.0	9.7	10.7	5.4	12.3	12.3
	Flue gas temperature (on flue gas connection)	°C	310	311	278	296	241	292 271	350	360	305	305
	Rec. supply pressure	Pa	12	12	12	12	12	12	12	12	12	12
	CO ₂	%	11.1	10.3	9.7	8.9	11.6	8.2	9.7	10	8.9	8.9
	Rec. diameter according to M-FeuVo	cm	15	15	15	2x15	15	15	15	15	15	15
	Combustion air requirement	m³/h	28.5	31.4	28.7	52.6	15.9	34.9	35.2	39.6	39.6	39.6
Distances – Heating chamber	From wall	cm	8	6	6	10	6	6	11	7	–	–
	From floor	cm	–	–	–	–	0	0	–	–	–	–
Distance in radiant heat area of pane	Front	mm	800	1500	1500	800	1750	1750	800	1700	1700	1700
	Side	mm	–	–	–	–	–	–	–	–	–	–
	Back	mm	–	–	–	–	–	–	800	1700	1700	1700
Heat insulation (example rock wool mat acc. to AGI-Q 132)	Installation floor	cm	0	0	0	9	0	0	–	4	–	–
	Installation wall	cm	10	10	10	12	9	9	8	–	–	–
	Side wall	cm	10	6	6	12	9	9	8	7	7	7
	Ceiling	cm	–	–	–	–	–	–	–	–	–	–
	Additional walling for wall protection	cm	10	10	10	10	10	10	10	10	10	10
Replacement insulation mat. Calcium silicate ***	Installation floor	cm	0	0	0	8	0	0	–	3	–	–
	Installation wall	cm	9	9	9	10	8	8	7	–	–	–
	Side wall	cm	9	5	5	10	8	8	7	6	6	6
	Ceiling	cm	–	–	–	–	–	–	–	–	–	–
Heat distribution	Convection	%	64	53	53	53	76	76	56	53	48	48
	Pane	%	36	47	47	47	24	24	44	47	52	52
	H ₂ O	%	0	0	0	0	0	0	0	0	0	0

* only complies with 15a 2015 w. AT att., attention: Flue gas conn. height + 160 mm · NSHF = heat recovery surface ↗ behind 🔥 H₂O S = Unit additionally tested with low power

*** Example SILCA 250KM: approved replacement insulation mat. acc. to DIBt No. Z-43.14-117 and CE 0432-CPD-420002242/2-6

		Varia FD-87h	Varia FD-87h NSHF	Varia AS-FDh	Varia AS-FDh NSHF	Varia A-FDh	Varia B-FDh	Mini 2L/2R	Mini 2LRh 51	Mini 2LRh 57	Varia 2L-55 / 2R-55	Varia 2L-55h / Varia 2R-55h
General data	Energy efficiency class	A+	A+	A+	A+	A	A	A	A	A	A	A
	Nominal heat output	kW	10.6	11.1	7.0	11.0	10.4	11.0	7.0	7.0	7.0	7.0
	Output range	kW	7.4-13.8	7.8-14.4	4.9-9.1	7.7-14.3	7.3-13.5	7.7-14.3	4.9-9.1	4.9-9.1	4.9-9.1	4.9-9.1
	Efficiency	%	>80	>85	>80	>85	>80	79	80	80	80	80
	Rec. chimney diameter	mm	200	200	180	180	250	180	180	180	180	180
	Flue gas connection Ø	mm	–	–	–	–	–	–	–	–	–	–
	Weight (approx.)	kg	297	297	205	205	314	390	166	199	211	170
	Rec. min. cross section for circ./incom. air (with WLM)cm²	700	–	700	–	700	700	700	700	700	700	700
	Rec. min. cross section for circ./incom. air (without WLM) cm²	1020/1220	510/610	800/1000	800/1000	1240/1030	1030/1230	750/900	750/900	750/900	860/985	860/985
Tests and values	Non-self-closing fire door (Design A)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Self-closing fire door (Design A1)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Operation with open combustion chamber door	–	–	–	–	✓	✓	–	–	–	✓	✓
	Level 2 BlmSchV. 2010	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	15a B-VG	✓	✓	–	✓	✓	–	✓	✓	✓	✓	✓
	Ecodesign 2022	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Triple value for open firebox	DIBt admission	–	–	–	–	–	–	–	–	–	–	–
	Flue gas mass flow	g/s	–	–	–	21.4	23.8	–	–	–	36.8	36.8
	Flue gas temperature (on flue gas connection)	°C	–	–	–	240	240	–	–	–	170	170
	Flue gas temperature downstream of NSHF	°C	–	–	–	–	–	–	–	–	–	–
	Combustion air requirement	m³/h	–	–	–	252	285	–	–	–	161	161
Triple value for closed firebox	Rec. supply pressure	Pa	–	–	–	10	10	–	–	–	10	10
	Flue gas mass flow	g/s	10.2	10.8	6.1	9.9	8.9	11.5	6.2	6.2	6.2	6.1
	Flue gas temperature (on flue gas connection)	°C	275	442 271	290	272 271	300	300	343	343	343	325
	Rec. supply pressure	Pa	12	12	12	12	12	12	12	12	12	12
	CO ₂	%	9.3	8.2	9.2	8.4	10.2	8.4	10.3	10.3	10.3	10.8
	Rec. diameter according to M-FeuVo	cm	15	15	15	15	15	2x15	15	15	15	15
	Combustion air requirement	m³/h	33.8	37.8	22.9	36.8	30.9	40.3	20.7	20.7	19.8	19.8
Distances – Heating chamber	From wall	cm	–	10	6	6	8	11	10	10	10	10
	From floor	cm	21	33.5	–	–	–	–	0	0	0	–
Distance in radiant heat area of pane	Front	mm	1790	1780	1000	1000	1100	800	900	900	800	800
	Side	mm	–	–	–	–	–	–	900	900	800	800
	Back	mm	1790	1780	1000	1000	1100	800	–	–	–	–
Heat insulation (example rock wool mat acc. to AGI-Q 132)	Installation floor	cm	0	0	0	0	0	4	0	0	0	0
	Installation wall	cm	–	–	–	–	–	–	9	9	9	10
	Side wall	cm	12	12	8	8	8	8	9	9	9	6
	Ceiling	cm	4	4	–	–	–	–	–	–	–	–
	Additional walling for wall protection	cm	10	10	10	10	10	10	10	10	10	10
Replacement insulation mat. Calcium silicate ***	Installation floor	cm	0	0	0	0	3	0	0	0	0	0
	Installation wall	cm	–	–	–	–	–	–	8	8	8	9
	Side wall	cm	10	10	7	7	7	7	8	8	8	5
	Ceiling	cm	4	4	–	–	–	–	–	–	–	–
Heat distribution	Convection	%	40	40	42	42	41	47	54	54	51	42
	Pane	%	60	60	58	58	59	53	46	46	49	58
	H ₂ O	%	0	0	0	0	0	0	0	0	0	0

* only complies with 15a 2015 w. AT att., attention: Flue gas conn. height + 160 mm · NSHF = heat recovery surface ↗ behind 🔥 H₂O S = Unit additionally tested with low power

*** Example SILCA 250KM: approved replacement insulation mat. acc. to DIBt No. Z-43.14-117 and CE 0432-CPD-420002242/2-6

		Varia 2L-62 / Varia 2R-62	Varia 2L-62 / Varia 2R-62 NSHF	Varia 2L-62h / Varia 2R-62h	Varia 2L-62h / Varia 2R-62h NSHF	Varia 2Lh / 2R-68h	Varia 2Lh / 2R-68h NSHF	Varia 2Lh / 2R-68h NSHF	Varia 2Lh / 2R-68h NSHF	Varia 2Lh / 2R-68h NSHF	Varia 2Lh / 2R-68h NSHF	Varia 2Lh / 2R-68h NSHF
General data	Energy efficiency class	A+	A+	A+	A+	A+	A+	A	A	A+	A+	A
	Nominal heat output	6.9	10.0	6.9	10.0	9.6	9.9	11.0	11.0	12.0	12.0	7.0
	Output range	4.8-9.0	7.0-13.0	4.8-9.0	7.0-13.0	6.7-12.5	6.9-12.9	7.7-14.3	7.7-14.3	8.4-15.6	8.4-15.6	4.9-9.1
	Efficiency	>80	>85	>80	>85	>80	>85	80	80	>85	>85	>78
	Rec. chimney diameter	180	180	180	180	200	200	200	200	200	200	200
	Flue gas connection Ø	mm	–	–	–	250	250	180	180	180	180	180
	Weight (approx.)	kg	181	181	206	206	310	310	257	277	277	257
	Rec. min. cross section for circ./incom. air (with WLM) cm²	700	–	700	–	700	–	700	700	–	–	700
Tests and values	Rec. min. cross section for circ./incom. air (without WLM) cm²	800/900	980/1100	800/900	980/1100	890/1070	890/1070	1250/1500	1250/1500	970/930	970/930	970/930
	Non-self-closing fire door (Design A)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Self-closing fire door (Design A1)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Operation with open combustion chamber door	–	–	–	–	–	–	–	–	–	–	–
	Level 2 BlmSchV. 2010	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	15a B-VG	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓*
	Ecodesign 2022	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DIBt admission	–	–	–	–	–	–	–	–	–	–	–
Triple value for open firebox	Flue gas mass flow	g/s	–	–	–	–	–	21.2	21.2	–	–	–
	Flue gas temperature (on flue gas connection)	°C	–	–	–	–	–	270	270	–	–	–
	Flue gas temperature downstream of NSHF	°C	–	–	–	–	–	–	–	–	–	–
	Combustion air requirement	m³/h	–	–	–	–	–	154	176	–	–	–
Triple value for closed firebox	Rec. supply pressure	Pa	–	–	–	–	–	10	10	–	–	–
	Flue gas mass flow	g/s	6.1	8.9	6.1	8.9	8.8	9.3	9.6	9.6	10.0	7.7
	Flue gas temperature (on flue gas connection)	°C	288	322 184	288	322 184	276	379 195	330	330	350 218	245
	Rec. supply pressure	Pa	12	12	12	12	12	12	12	12	12	12
	CO ₂	%	10.2	9.2	10.2	9.2	9.9	8.9	10	10	10	8.3
	Rec. diameter according to M-FeuVo	cm	15	15	15	15	15	15	15	15	15	15
	Combustion air requirement	m³/h	20.1	30.2	20.1	30.2	28.8	31.1	33.5	33.9	33.9	26.4
	Combustion air requirement	m³/h	20.1	30.2	20.1	30.2	28.8	31.1	33.5	33.9	33.9	26.4
Distances – Heating chamber	From wall	cm	10	10	10	10	8	8	12	12	6	6
	From floor	cm	3.6	22.5	3.6	22.5	0	0	–	–	–	–
Distance in radiant heat area of pane	Front	mm	1000	1100	1000	1100	1400	1500	800	800	800	800
	Side	mm	700	700	700	700	1200	1200	800	800	800	800
	Back	mm	–	–	–	–	–	–	–	–	–	–
Heat insulation (example rock wool mat acc. to AGI-Q 132)	Installation floor	cm	0	0	0	0	0	0	0	–	–	0
	Installation wall	cm	12	12	12	12	7	7	5	5	5	10
	Side wall	cm	12	12	12	12	7	7	5	5	5	8
	Ceiling	cm	7	3	7	3	7	4	–	–	–	–
	Additional walling for wall protection	cm	10	10	10	10	10	10	10	10	10	10
Replacement insulation mat. Calcium silicate ***	Installation floor	cm	0	0	0	0	0	0	0	–	–	0
	Installation wall	cm	10	10	10	10	6	6	4	4	4	9
	Side wall	cm	10	10	10	10	6	6	4	4	4	7
	Ceiling	cm	6	3	6	3	6	4	–	–	–	–
Heat distribution	Convection	%	42	42	42	42	45	45	53	51	53	53
	Pane	%	58	58	58	58	55	55	47	49	47	47
	H ₂ O	%	0	0	0	0	0	0	0	0	0	0

* only complies with 15a 2015 w. AT att., attention: Flue gas conn. height + 160 mm · NSHF = heat recovery surface ↗ behind 🔥 H₂O S = Unit additionally tested with low power

*** Example SILCA 250KM: approved replacement insulation mat. acc. to DIBt No. Z-43.14-117 and CE 0432-CPD-420002242/2-6

		Varia AS-2Lh / AS-2Rh	Varia 2L-80h / Varia 2R-80h	Varia 2L-100h / Varia 2R-100h	Arte 2LRh-66	Arte 2LRh-66 NSHF	Varia AS-3RLh	Varia Ch	Arte U-50h	Arte U-70h	Arte U-90h (Ø 200)	Arte U-90h (Ø 250)
General data	Energy efficiency class	A	A	A	A+	A+	A	A	A+	A+	A	A
	Nominal heat output	7.0	10.4	11.0	6.4	10.4	8.4	9.0	9.3	11.4	13.0	13.0
	Output range	4.9-9.1	7.3-13.5	7.7-14.3	4.5-8.3	7.3-13.5	5.9-10.9	6.3-11.7	6.5-12.1	8.0-14.8	9.1-16.9	9.1-16.9
	Efficiency	80	>80	>79	>80	>85	80	>79	>80	>80	>78	>78
	Rec. chimney diameter	200	200	250	180	180	200	250	200	250	200	250
	Flue gas connection Ø	mm	180	200	–	–	180	200	200	200	200	200
	Weight (approx.)	kg	199	272	317	186	186	224	309	235	342	392
	Rec. min. cross section for circ./incom. air (with WLM) cm²	700	700	700	700	–	700	700	700	700	700	700
Tests and values	Rec. min. cross section for circ./incom. air (without WLM) cm²	1200/1400	1200/1400	1140/1370	620/750	620/750	620/750	890/1070	560/680	650/1200	940/1130	940/1130
	Non-self-closing fire door (Design A)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Self-closing fire door (Design A1)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Operation with open combustion chamber door	–	–	–	–	–	–	–	–	–	–	–
	Level 2 BlmSchV. 2010	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	15a B-VG	✓	✓	✓*	✓	✓	✓	–	✓	✓	✓*	✓*
	Ecodesign 2022	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DIBt admission	–	–	–	–	–	–	–	–	–	–	–
Triple value for open firebox	Flue gas mass flow	g/s	–	20.2	–	–	–	18.4	–	–	–	–
	Flue gas temperature (on flue gas connection)	°C	–	210	–	–	–	240	–	–	–	–
	Flue gas temperature downstream of NSHF	°C	–	–	–	–	–	–	–	–	–	–
	Combustion air requirement	m³/h	–	207.5	–	–	–	199.8	–	–	–	–
Triple value for closed firebox	Rec. supply pressure	Pa	–	10	–	–	–	10	–	–	–	–
	Flue gas mass flow	g/s	6.6	9.6	12.0	6.6	8.6	8.9	8.8	8.5	11.2	13.4
	Flue gas temperature (on flue gas connection)	°C	311	283	280	275	327 174	283	340	311	296	310
	Rec. supply pressure	Pa	11.5	12	12	12	13	12	14	12	12	12
	CO ₂	%	9.7	10.1	8.2	9	9.2	8.8	9.7	10.3	9.6	9.2
	Rec. diameter according to M-FeuVo	cm	15	15	15	15	15	15	15	15	15	15
	Combustion air requirement	m³/h	21.9	31.3	41.1	21.1	31	29	28.4	27.2	35.7	44
	Combustion air requirement	m³/h	21.9	31.3	41.1	21.1	31	29	28.4	27.2	35.7	44
Distances – Heating chamber	From wall	cm	10	10	10	8	8	6	8	6	8	10
	From floor	cm	0	–	–	0	0	12	–	3.5	0	–
Distance in radiant heat area of pane	Front	mm	1300	1800	800	1200	1000	1500	800	850	800	800
	Side	mm	1300	1800	800	1200	1000	800	800	1000	1100	800
	Back	mm	–	–	–	–	–	–	–	–	–	–
Heat insulation (example rock wool mat acc. to AGI-Q 132)	Installation floor	cm	0	0	4	0	0	0	–	0	–	4
	Installation wall	cm	8	12	8	9	9	9	6	7	7	6
	Side wall	cm	8	12	8	9	9	–	6	–	–	4
	Ceiling	cm	–	–	–	–	–	12	–	–	–	–
	Additional walling for wall protection	cm	10	10	10	10	10	10	10	10	10	10
Replacement insulation mat. Calcium silicate ***	Installation floor	cm	0	0	3	0	0	0	–	0	–	3
	Installation wall	cm	7	10	7	8	8	8	5	6	6	5
	Side wall	cm	7	10	7	8	8	–	5	–	–	3
	Ceiling	cm	–	–	–	–	–	10	–	–	–	–
Heat distribution	Convection	%	57	53	52	63	63	39	52	31	32	36
	Pane	%	43	47	48	37	37	61	48	69	68	64
	H ₂ O	%	0	0	0	0	0	0	0	0	0	0

* only complies with 15a 2015 w. AT att., attention: Flue gas conn. height + 160 mm · NSHF = heat recovery surface ↗ behind 🔥 H₂O S = Unit additionally tested with low power

*** Example SILCA 250KM: approved replacement insulation mat. acc. to DIBt No. Z-43.14-117 and CE 0432-CPD-420002242/2-6

		Arte 3RL-60h (Ø 200)	Arte 3RL-60h (Ø 250)	Arte 3RL-80h (Ø 200)	Arte 3RL-80h (Ø 250)	Arte 3RL-100h	Speedy Ph	Mini R1V RLU	Mini Z1 RLU	Mini S RLU	Mini Sh RLU	Varia 1V RLU 51
General data	Energy efficiency class	A+	A+	A	A	A	A+	A	A	A	A	A
	Nominal heat output kW	10.0	10.0	11.4	11.4	11.0	7.0	5.2	7.0	7.0	7.0	11.0
	Output range kW	7.0-13.0	7.0-13.0	8.0-14.8	8.0-14.8	7.7-14.3	4.9-9.1	4.5-6.8	4.9-9.1	4.9-9.1	4.9-9.1	7.7-14.3
	Efficiency %	>80	>80	80	80	>78	>80	80	>78	>78	>78	>80
	Rec. chimney diameter mm	200	250	200	250	250	180	180	180	180	180	200
	Flue gas connection Ø mm	–	200	200	200	–	–	–	–	–	–	–
	Weight (approx.) kg	264	264	337	337	381	210	121	164	142	175	217
	Rec. min. cross section for circ./incom. air (with WLM)cm²	700	700	700	700	700	700	700	700	700	700	700
	Rec. min. cross section for circ./incom. air (without WLM) cm²	650/860	650/860	830/990	830/990	930/1110	630/750	780/850	950/1140	810/980	810/980	1420/1710
Tests and values	Non-self-closing fire door (Design A)	✓	✓	✓	✓	✓	✓	–	–	–	–	–
	Self-closing fire door (Design A1)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Operation with open combustion chamber door	–	–	–	–	–	–	–	–	–	–	–
	Level 2 BlmSchV. 2010	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	15a B-VG	✓	✓	✓	✓	✓*	✓	✓	✓	–	–	–
	Ecodesign 2022	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Triple value for open firebox	DIBt admission	–	–	–	–	–	–	Z-43.12-316	Z-43.12-316	Z-43.12-316	Z-43.12-450	Z-43.12-316
	Flue gas mass flow g/s	–	–	–	–	40	–	–	–	–	–	–
	Flue gas temperature (on flue gas connection) °C	–	–	–	–	180	–	–	–	–	–	–
	Flue gas temperature downstream of NSHF °C	–	–	–	–	–	–	–	–	–	–	–
	Combustion air requirement m³/h	–	–	–	–	314.1	–	–	–	–	–	–
Triple value for closed firebox	Rec. supply pressure Pa	–	–	–	–	10	–	–	–	–	–	–
	Flue gas mass flow g/s	10.5	10.5	12.6	12.6	10.3	5.7	4.7	7.5	8.8	8.8	9.6
	Flue gas temperature (on flue gas connection) °C	270	270	275	275	360	290	358	330	290	290	288
	Rec. supply pressure Pa	12	12	12	12	12	12	12	12	14	14	12
	CO₂ %	8.9	8.9	8.6	8.6	9.8	10.5	9.8	8.6	7.9	7.9	10.9
	Rec. diameter according to M-FeuVo cm	15	15	15	15	15	15	–	–	–	–	–
Distances – Heating chamber	Combustion air requirement m³/h	33.7	33.7	40.3	40.3	35.0	20.1	16.2	25.5	27.6	27.6	30.7
	From wall cm	8	8	8	8	10	6	9	10	9	10	10
Distance in radiant heat area of pane	From floor cm	0	0	0	0	–	–	–	–	–	–	–
	Front mm	1180	1180	1440	1440	800	800	800	800	800	800	1800
	Side mm	880	880	900	900	800	–	–	–	–	–	–
Heat insulation (example rock wool mat acc. to AGI-Q 132)	Back mm	–	–	–	–	–	–	–	–	–	–	–
	Installation floor cm	0	0	0	0	4	0	0	–	–	–	0
	Installation wall cm	7	7	9	9	8	5	9	6	6	6	12
	Side wall cm	–	–	–	–	–	5	9	6	6	6	12
	Ceiling cm	–	–	0	0	–	–	–	–	–	–	–
	Additional walling for wall protection cm	10	10	10	10	10	10	10	10	10	10	10
Replacement insu-lation mat. Calcium silicate ***	Installation floor cm	0	0	0	0	3	0	0	–	–	–	0
	Installation wall cm	6	6	8	8	8	4	8	5	5	5	10
	Side wall cm	–	–	–	–	–	4	8	5	5	5	10
	Ceiling cm	–	–	0	0	–	–	–	–	–	–	–
Heat distribution	Convection %	33	33	36	36	42	40	62	68	60	58	54
	Pane %	67	67	64	64	58	60	38	32	40	42	46
	H₂O %	0	0	0	0	0	0	0	0	0	0	0

* only complies with15a 2015 w. AT att., attention: Flue gas conn. height + 160 mm · NSHF = heat recovery surface ↗ behind 🔥 H₂O S = Unit additionally tested with low power

*** Example SILCA 250KM: approved replacement insulation mat. acc. to DIBt No. Z-43.14-117 and CE 0432-CPD-420002242-6

		Varia 1V RLU 57	Varia 1V S RLU 51	Varia 1V S RLU 57	Varia 1Vh RLU 51	Varia 1Vh RLU 57	Varia AS RLU	Varia ASh RLU	Varia Sh RLU	Varia M-80h RLU	Varia Bh RLU	Arte 1Vh-66 RLU
General data	Energy efficiency class	A	A+	A+	A+	A+	A+	A+	A	A	A	A+
	Nominal heat output kW	11.0	7.0	7.0	11.0	11.0	7.0	7.0	11.0	9.0	10.4	6.6
	Output range kW	7.7-14.3	4.9-9.1	4.9-9.1	7.7-14.3	7.7-14.3	4.9-9.1	4.9-9.1	7.7-14.3	6.3-11.7	7.3-13.5	4.6-8.6
	Efficiency %	80	>80	>80	>80	>80	>80	>80	80	>78	>78	>85
	Rec. chimney diameter mm	200	200	200	200	200	180	180	200	200	250	180
	Flue gas connection Ø mm	–	–	–	–	–	–	–	180	180	200	–
	Weight (approx.) kg	225	217	225	282	288	166	209	272	291	350	243
	Rec. min. cross section for circ./incom. air (with WLM)cm²	700	700	700	700	700	700	700	700	700	700	700
	Rec. min. cross section for circ./incom. air (without WLM) cm²	1420/1710	900/1090	900/1090	1420/1710	1420/1710	1200/1000	1200/1000	1550/1860	1090/1310	1270/1520	770/970
Tests and values	Non-self-closing fire door (Design A)	–	–	–	–	–	–	–	–	–	–	–
	Self-closing fire door (Design A1)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Operation with open combustion chamber door	–	–	–	–	–	–	–	–	–	–	–
	Level 2 BlmSchV. 2010	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	15a B-VG	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ecodesign 2022	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Triple value for open firebox	DIBt admission	Z-43.12-316	Z-43.12-316	Z-43.12-316	Z-43.12-450	Z-43.12-450	Z-43.12-316	Z-43.12-450	Z-43.12-450	Z-43.12-450	Z-43.12-450	Z-43.12-450
	Flue gas mass flow g/s	–	–	–	–	–	–	–	–	–	–	–
	Flue gas temperature (on flue gas connection) °C	–	–	–	–	–	–	–	–	–	–	–
	Flue gas temperature downstream of NSHF °C	–	–	–	–	–	–	–	–	–	–	–
	Combustion air requirement m³/h	–	–	–	–	–	–	–	–	–	–	–
Triple value for closed firebox	Rec. supply pressure Pa	–	–	–	–	–	–	–	–	–	–	–
	Flue gas mass flow g/s	9.0	5.6	5.6	8.1	7.6	7.0	7.0	9.5	9.1	9.5	5.0
	Flue gas temperature (on flue gas connection) °C	305	300	300	335	315	275	275	300	310	311	241
	Rec. supply pressure Pa	12	12	12	12	12	12	12	11	12	12	12
	CO₂ %	11.8	10.3	10.3	12.1	12.6	8.4	8.4	10.1	8.9	10.3	11.6
	Rec. diameter according to M-FeuVo cm	–	–	–	–	–	–	–	–	–	–	–
Distances – Heating chamber	Combustion air requirement m³/h	28.3	19.9	19.9	27.1	25.7	25	25	33.1	31.6	31.4	15.9
	From wall cm	10	7	7	8	8	10	10	10	8	6	6
Distance in radiant heat area of pane	From floor cm	–	–	–	0	0	–	–	–	–	–	0
	Front mm	1800	800	800	1900	1900	1400	1400	800	800	1500	1750
	Side mm	–	–	–	–	–	–	–	–	–	–	–
Heat insulation (example rock wool mat acc. to AGI-Q 132)	Back mm	–	–	–	–	–	–	–	–	–	–	–
	Installation floor cm	0	–	–	–	–	0	0	0	0	0	0
	Installation wall cm	9	10	10	12	12	10	10	8	8	10	9
	Side wall cm	12	10	10	12	12	10	10	6	8	6	9
	Ceiling cm	–	–	–	–	–	–	–	–	–	–	–
	Additional walling for wall protection cm	10	10	10	10	10	10	10	10	10	10	10
Replacement insu-lation mat. Calcium silicate ***	Installation floor cm	0	–	–	–	–	0	0	0	0	0	0
	Installation wall cm	8	9	9	10	10	9	9	7	7	9	8
	Side wall cm	10	9	9	10	10	9	9	5	7	5	8
	Ceiling cm	0	–	–	–	–	–	–	–	–	–	–
Heat distribution	Convection %	56	54	56	54	56	59	59	58	60	53	76
	Pane %	44	46	44	46	44	41	41	42	40	47	24
	H₂O %	0	0	0	0	0	0	0	0	0	0	0

* only complies with15a 2015 w. AT att., attention: Flue gas conn. height + 160 mm · NSHF = heat recovery surface ↗ behind 🔥 H₂O S = Unit additionally tested with low power

*** Example SILCA 250KM: approved replacement insulation mat. acc. to DIBt No. Z-43.14-117 and CE 0432-CPD-420002242-6

		Varia FD RLU	Varia 2L-55h / 2R-55h RLU	Varia 2L-62h / 2R-62h RLU	Varia 1V H ₂ O	Varia 1V H ₂ O XL	Varia 1V H ₂ O XXL	Varia 1Vh H ₂ O	Varia 1Vh H ₂ O XL	Varia 1Vh H ₂ O XXL	Varia Ah H ₂ O	Varia FD H ₂ O
General data	Energy efficiency class	A	A	A+	A+	A+	A+	A+	A+	A+	A+	A+
	Nominal heat output	11.6	7.0	6.9	8.0	9.0	15.0	8.0	9.0	15.0	10.4	10.0
	Output range	8.1-15.1	4.9-9.1	4.8-9.0	5.6-10.4	6.3-11.7	10.5-19.5	5.6-10.4	6.3-11.7	10.5-19.5	7.3-13.5	7.0-13.0
	Efficiency	80	>80	>80	>80	>85	>85	>80	>85	>85	>85	>80
	Rec. chimney diameter	250	180	180	180	200	200	180	200	200	200	200
	Flue gas connection Ø	–	–	–	–	180	180	–	180	180	180	–
	Weight (approx.)	212	222	180	336	341	351	374	379	389	471	424
	Rec. min. cross section for circ./incom. air (with WLM)cm²	700	700	700	–	–	–	–	–	–	–	–
	Rec. min. cross section for circ./incom. air (without WLM) cm²	1270/1060	860/985	800/900	800/1000	800/1000	800/1000	800/1000	800/1000	800/1000	250/300	210/250
Tests and values	Non-self-closing fire door (Design A)	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓
	Self-closing fire door (Design A1)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Operation with open combustion chamber door	–	–	–	–	–	–	–	–	–	–	–
	Level 2 BlmSchV. 2010	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	15a B-VG	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ecodesign 2022	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Triple value for open firebox	DIBt admission	Z-43.12-316	Z-43.12-450	Z-43.12-450	–	–	–	–	–	–	–	–
	Flue gas mass flow	g/s	–	–	–	–	–	–	–	–	–	–
	Flue gas temperature (on flue gas connection)	°C	–	–	–	–	–	–	–	–	–	–
	Flue gas temperature downstream of NSHF	°C	–	–	–	–	–	–	–	–	–	–
	Combustion air requirement	m³/h	–	–	–	–	–	–	–	–	–	–
Triple value for closed firebox	Rec. supply pressure	Pa	–	–	–	–	–	–	–	–	–	–
	Flue gas mass flow	g/s	12.3	6.1	6.1	6.7	7.5	13.1	6.7	7.5	13.1	8.0
	Flue gas temperature (on flue gas connection)	°C	305	325	288	240	220	225	240	220	225	230
	Rec. supply pressure	Pa	12	12	12	12	12	12	12	12	12	12
	CO ₂	%	8.9	10.8	10.2	9.6	9.7	8.9	9.6	9.7	8.9	11.1
	Rec. diameter according to M-FeuVo	cm	–	–	15	15	15	15	15	15	15	15
	Combustion air requirement	m³/h	39.6	19.7	20.1	24	26.3	48.2	24	26.3	48.2	26.5
Distances – Heating chamber	From wall	cm	–	10	10	6	6	6	6	6	6	6
	From floor	cm	–	–	3.6	–	–	–	–	–	–	–
Distance in radiant heat area of pane	Front	mm	1700	800	1000	1500	1500	1500	1500	1500	800	800
	Side	mm	–	800	700	–	–	–	–	–	–	–
	Back	mm	1700	–	–	–	–	–	–	–	–	800
Heat insulation (example rock wool mat acc. to AGI-Q 132)	Installation floor	cm	–	0	0	0	0	0	0	0	0	0
	Installation wall	cm	–	10	12	6	6	6	6	6	5	–
	Side wall	cm	7	6	12	6	6	6	6	6	5	12
	Ceiling	cm	–	–	7	–	–	–	–	–	–	–
	Additional walling for wall protection	cm	10	10	10	10	10	10	10	10	10	10
Replacement insulation mat. Calcium silicate ***	Installation floor	cm	–	0	0	0	0	0	0	0	0	0
	Installation wall	cm	–	9	10	5	5	5	5	5	4	–
	Side wall	cm	6	5	10	5	5	5	5	5	4	10
	Ceiling	cm	–	–	6	–	–	–	–	–	–	–
Heat distribution	Convection	%	48	42	42	2	15	9	2	15	9	3
	Pane	%	52	58	58	35	18	18	35	18	16	33
	H ₂ O	%	0	0	0	63	67	73	63	67	69	64

* only complies with 15a 2015 w. AT att., attention: Flue gas conn. height + 160 mm · NSHF = heat recovery surface ↗ behind 🔥 H₂O S = Unit additionally tested with low power
 *** Example SILCA 250KM: approved replacement insulation mat. acc. to DIBt No. Z-43.14-117 and CE 0432-CPD-420002242/2-6

		Varia FDh H ₂ O	Varia A-FDh H ₂ O	Varia 2L-55h / 2R-55h H ₂ O	Varia 2Lh / 2Rh H ₂ O
General data	Energy efficiency class	A+	A+	A+	A+
	Nominal heat output	10.0	10.4	7.0	10.4
	Output range	7.0-13.0	7.3-13.5	4.9-9.1	7.3-13.5
	Efficiency	>80	>80	> 85	>80
	Rec. chimney diameter	200	200	180	200
	Flue gas connection Ø	–	–	–	180
	Weight (approx.)	413	424	384	367
	Rec. min. cross section for circ./incom. air (with WLM)cm²	–	–	–	–
	Rec. min. cross section for circ./incom. air (without WLM) cm²	210/250	400/480	350/300	500/450
Tests and values	Non-self-closing fire door (Design A)	✓	✓	✓	✓
	Self-closing fire door (Design A1)	✓	✓	✓	✓
	Operation with open combustion chamber door	–	–	–	–
	Level 2 BlmSchV. 2010	✓	✓	✓	✓
	15a B-VG	✓	✓	–	–
	Ecodesign 2022	✓	✓	✓	✓
Triple value for open firebox	DIBt admission	–	–	–	–
	Flue gas mass flow	g/s	–	–	–
	Flue gas temperature (on flue gas connection)	°C	–	–	–
	Flue gas temperature downstream of NSHF	°C	–	–	–
	Combustion air requirement	m³/h	–	–	–
Triple value for closed firebox	Rec. supply pressure	Pa	–	–	–
	Flue gas mass flow	g/s	14.3	10.1	7.4
	Flue gas temperature (on flue gas connection)	°C	202	260	230
	Rec. supply pressure	Pa	12	12	12
	CO ₂	%	6.2	8.7	7.9
	Rec. diameter according to M-FeuVo	cm	15	15	15
	Combustion air requirement	m³/h	47.6	35.3	25.3
Distances – Heating chamber	From wall	cm	6	6	3
	From floor	cm	–	–	–
Distance in radiant heat area of pane	Front	mm	800	800	800
	Side	mm	–	–	800
	Back	mm	800	800	–
Heat insulation (example rock wool mat acc. to AGI-Q 132)	Installation floor	cm	0	–	0
	Installation wall	cm	–	–	4
	Side wall	cm	12	6	4
	Ceiling	cm	–	–	–
	Additional walling for wall protection	cm	10	10	10
Replacement insulation mat. Calcium silicate ***	Installation floor	cm	0	–	0
	Installation wall	cm	–	–	3
	Side wall	cm	10	5	3
	Ceiling	cm	–	–	–
Heat distribution	Convection	%	3	19	13
	Pane	%	33	21	27
	H ₂ O	%	64	60	60

* only complies with 15a 2015 w. AT att., attention: Flue gas conn. height + 160 mm · NSHF = heat recovery surface ↗ behind 🔥 H₂O S = Unit additionally tested with low power
 *** Example SILCA 250KM: approved replacement insulation mat. acc. to DIBt No. Z-43.14-117 and CE 0432-CPD-420002242/2-6

NOTES

[illegible]