

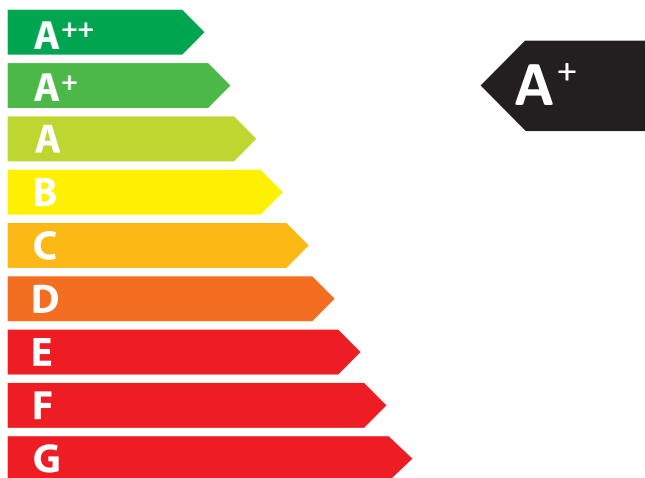


ENERG
енергия · ενέργεια



Linnatuli Oy

Ada Tunnel PL/ YL



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2015/1186

LINNATULI

WARRANTY

All Linnatuli fireplaces have a warranty period of five (5) years for body materials and functioning. Fireplace doors have a warranty period of one (1) year granted by door manufacturers. The warranty period starts from the moment that the goods are delivered to the end user.

The warranty for body materials and functioning covers faults in production and in materials. The warranty is valid in cases when the fireplace is installed by an authorized installer of Linnatuli Ltd. The warranty is valid also in cases when the fireplace is installed strictly following the fireplace drawings and all the installation manuals are obeyed. All user and installation manuals of different installation materials must be met. The fireplace installer is responsible for all mistakes or errors in the installation process and damages in the fireplace's body that are caused by installation errors.





The warranty does not cover fissures on the appliance's surface, in tile seams or inside the fireplace's fire chamber that does not have an effect on functioning or safety of the fireplace. The warranty does not cover small shades in tile colours or other shades and shapes in the plastered surface. The damages occurred by the incorrect usage or disobeying the user manual and maintenance manual are not covered by the warranty.

Linnatuli Ltd is not responsible for fireplace's functioning if the appliance is connected to a flue that does not fulfil local recommendations or in case there is a negative pressure in the room. The condition and the functioning of an existing flue must always be ensured before the fireplace installation by the chimney sweeper or by the local fire department officer. The compensation air must be taken near enough to make sure that the fireplace gets good draught and the clean combustion is possible.

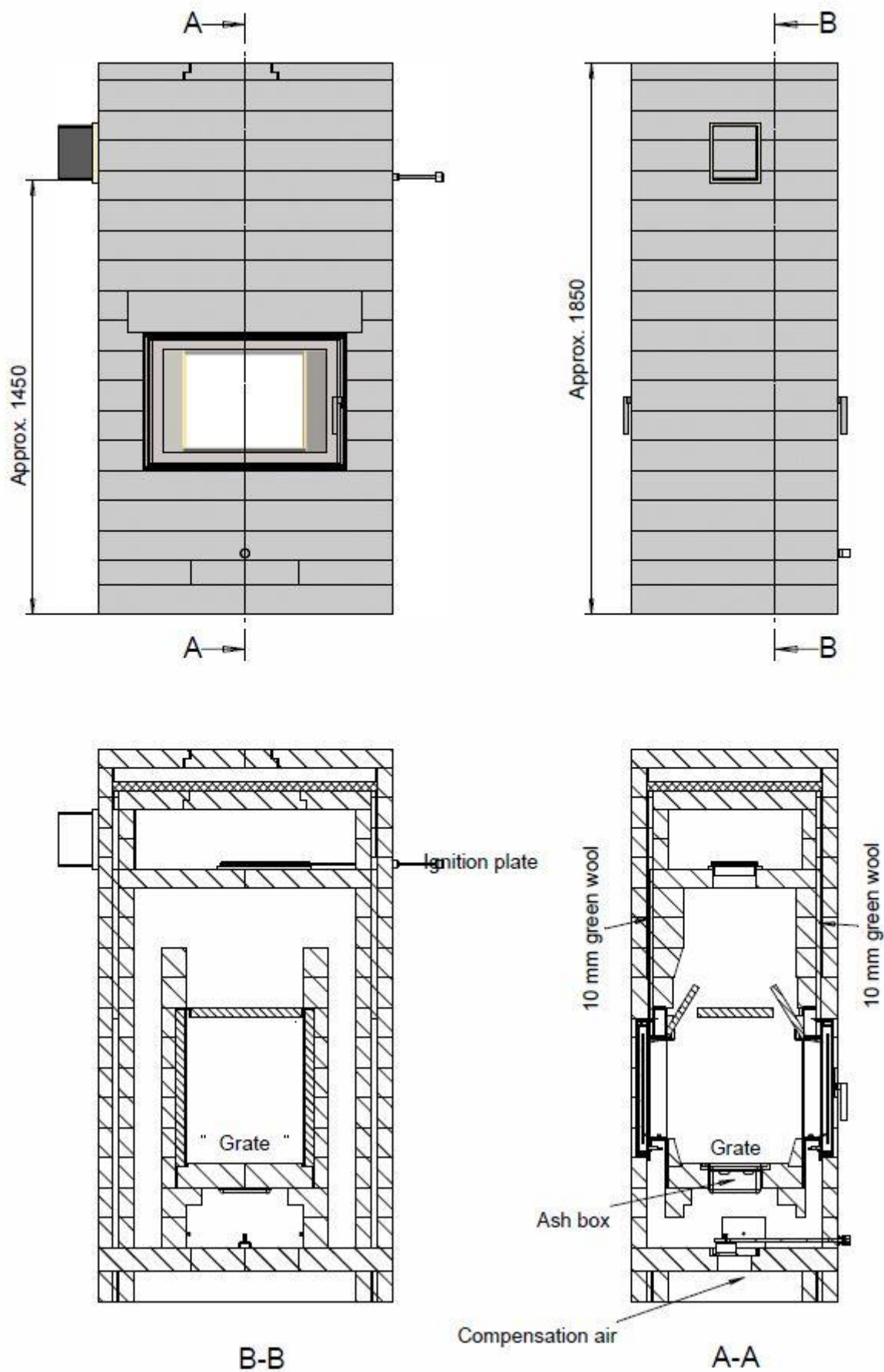
FIREPLACE DELIVERY

Fireplace is delivered on pallets and the casting elements are filled with the polystyrene fillings. The polystyrene fillings in the casting element (smoke flues, grill etc.) must be removed carefully before installation. With some fireplace models the polystyrene has been removed in the factory. Take the waste to an appropriate place, such as the to the collection point for waste to be incinerated. Normally the delivery is within 2-3 pallets. The pallets are protected with plastic hoods that can be used as bins for polystyrene fillings. The plastic hood is a short-term cover for the appliance for the time of delivery and warehouse storing. If the appliance is not installed immediately after the delivery and pallets are stored outside must pallets be protected with a separate tarp or weather-proof cover. In cases of long-term storing outside must the plasters and the metallic parts taken off the packages and be stored to a dry and warm environment – for example inside.

The fireplace is delivered to the end user on a week agreed. The possible postponement or change of the delivery week is always agreed with the customer separately. Delays that are caused by the transportation must always be settled with the freight company.

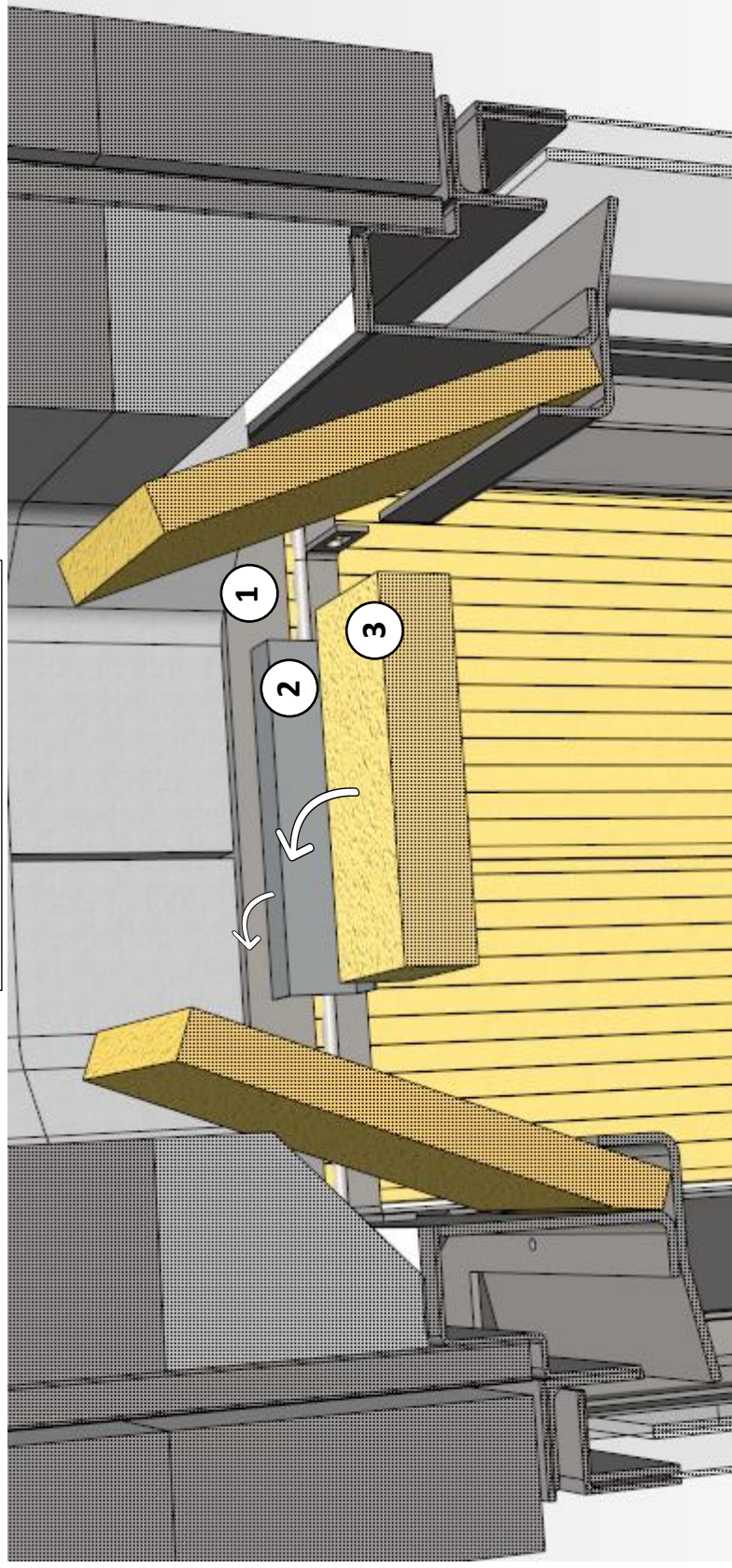
MORTAR/PLASTER	USE
	VETONIT ML 5 For straightening fireplace's bottom elements if needed.
	VETONIT ML TULI Fire-resistant masonry mortar. For attaching inner elements to each other all the way up.
	CRUSHED PORCELINE Must be put beneath the baking oven if the fireplace contains an oven. (Only in brick fireplaces).
	VETONIT AK / VETONIT SERPO Antique plaster: For coating the fireplace.
	VETONIT SUPRA LIGHT FIX Cement mortar. For attaching outer elements to each other all the way up and attaching the fibreglass netting. Can also be used for straightening bottom elements. Used also when attaching tile coating.
	MIRA FLEX FIX Only for attaching large tiles to the surface of the fireplace.

ADA TUNNEL HIGH CONNECTION



Height and weight of the fireplace can be increased with extra layers.
One extra layer is 100 mm high and it weighs 100 kg.

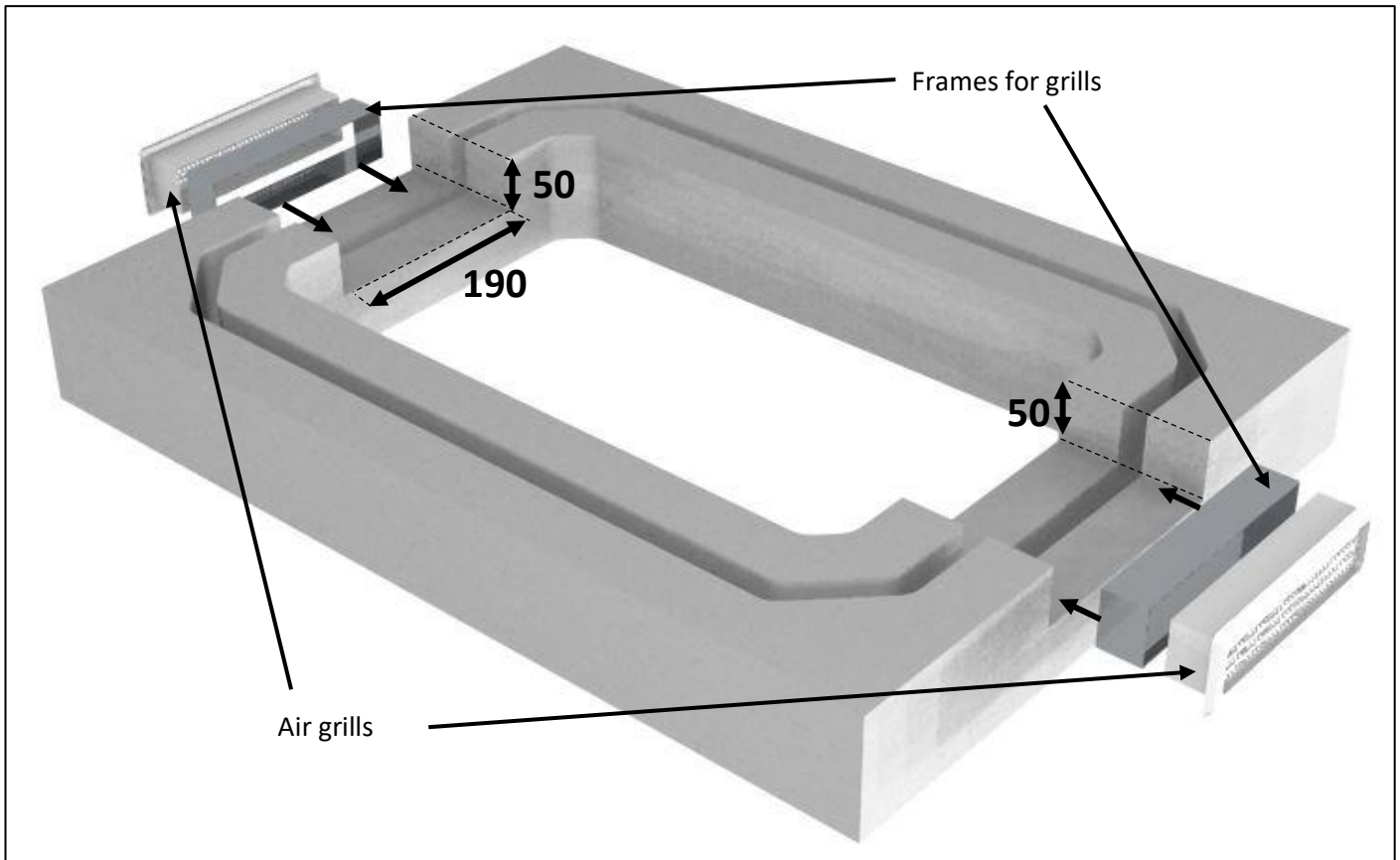
3D drawing



Horizontal vermiculite plate (3) is installed over S-shaped plates (2) on both sides of the fire chamber. These S-shaped plates are installed over L-shaped plates (1). L-plates are holding ceramic plates together.

BRINGING COMPENSATION AIR FROM THE ROOM (OPTION)

IDA, ADA, ELISE FIREPLACES



When compensation air is brought from the room to the fireplace instead of bringing it outside with a pipe to the fireplace, must first elements to be cut from sides. Grills' frames are 184 x 44 mm and frames are attached to outer elements with renovation plaster when installing the fireplace.

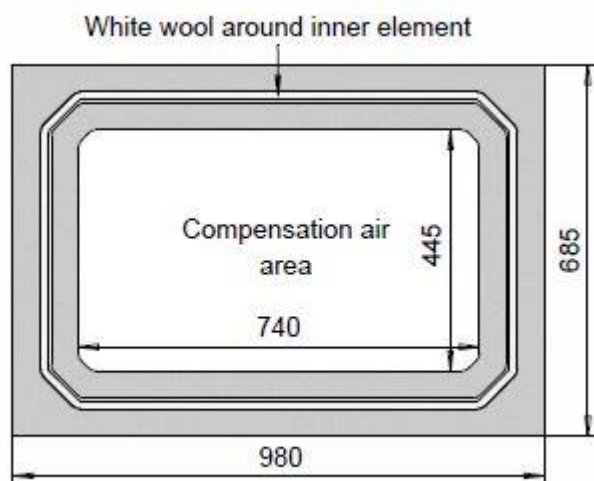
The air gap between inner and outer elements can be insulated with white ceramic wool if wanted.

Location of the grills in the picture is mainly normative. Grills can be installed also to other sides but there must be left space on front of them, so grills may be taken off when needed. Same holes must be made to inner and outer elements so there will be enough air for combustion and the amount of air is not reduced before air control plate.

Air grills can be attached when the fireplace is totally coated, and the surface is dry.

Follow upcoming layer pictures when installing the fireplace.

1

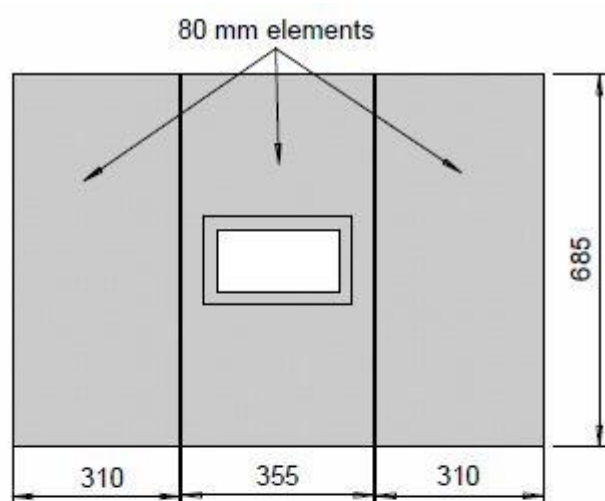


Set bottom sheets to the right position and angle using masonry mortar.

First layer consists of one outer element and one inner element of the fireplace. The hole for compensation air to the fireplace must be situated in the area surrounded by the element's inner lines. Remember to leave at least 20 mm airspace for ventilation between fireplace's background and the firewall.

Put white ceramic wool around the inner element for insulation.

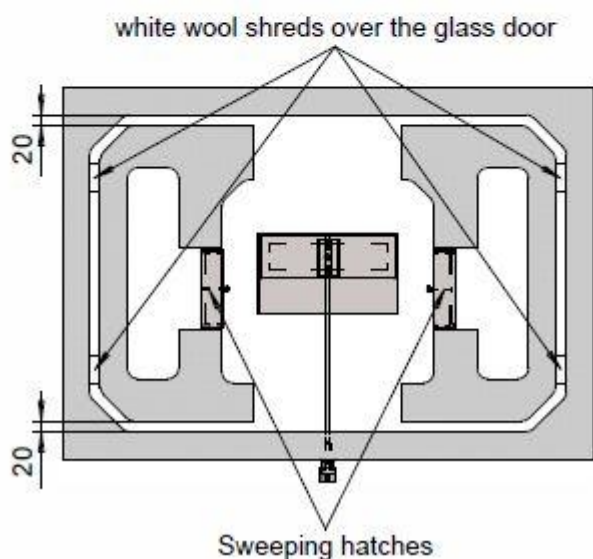
2



Make sure that the 30-mm inset on center of the elements is on the upside of the layer.

Elements of inner part must be masoned up with fire-resistant masonry mortar and elements of outer part with renovation mortar. Meeting of elements is approx. 1 mm with both mortars. Mortar must be used enough that meetings are condensed and filled properly.

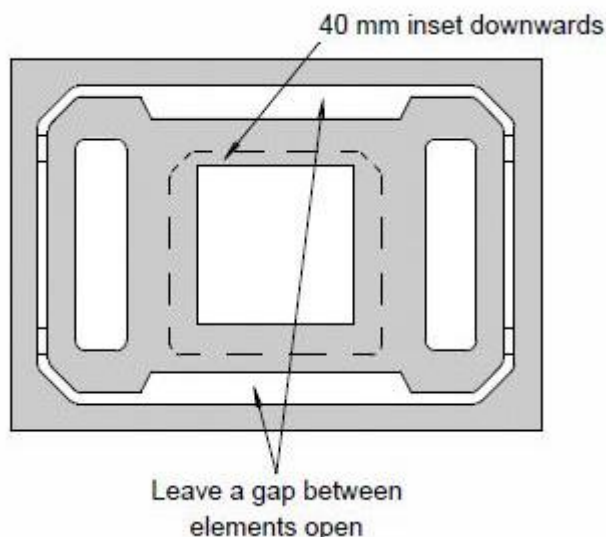
3



Put inner elements 20 mm away from the outer element. There should be left 20 mm gap between inner and outer part on front side of the fireplace.

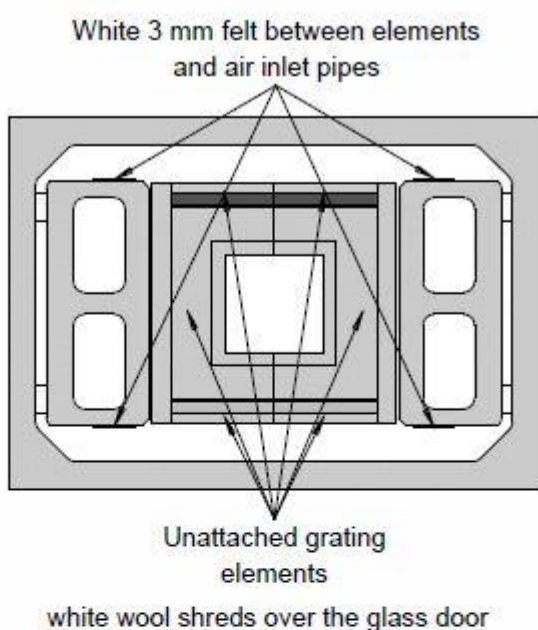
Condense sides of the airspace between inner and outer element over the fireplace's glass door with ceramic wool shreds (white wool). White wool shreds should be put in back and front corners of inner elements. Two sweeping hatch frames of ash nest are fastened with renovation mortar.

4



Leave the back and front space between elements open. Fire air is guided through these airspaces to the fire nest to reduce sooting of glass doors. Remove mortars from edges around funnels and the fireplace. Do final touches to funnels and inner walls of the fire nest with wet brush, paintbrush or sponge. Smooth funnels guarantee better draft for flue gas. Rise of elements are to be maintained as steady as possible. Inner element can be little below outer element, but it mustn't be over outer element.

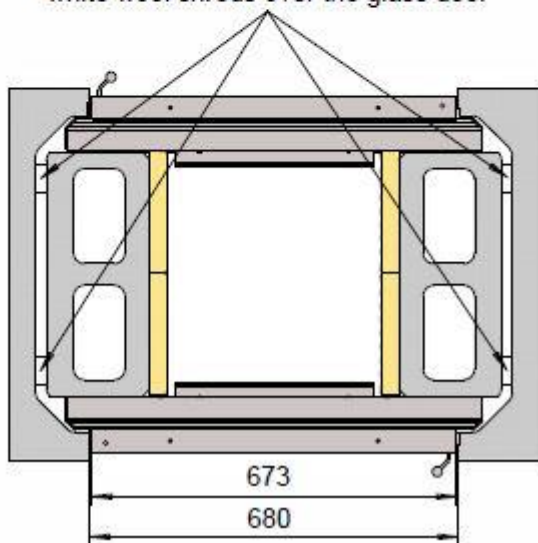
5



Grate elements of the fire nest have a hole for the iron grate. **Leave grating elements unattached. Unattached grating elements are more durable.** Inner elements of the fireplace are glued all the way up with fire-resistant masonry mortar. White 3 mm felt or white 10 mm wool should be put between inner elements and air piping systems (see layer 5).

Make sure that there is enough airspace for the 65-mm air piping system on the gap between inner and outer elements. You may try to fit the air piping system to the gap.

6

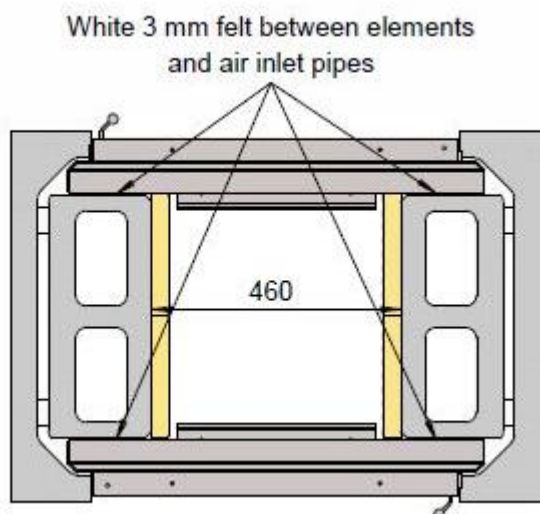


Outer element consists of two elements between layers 6 and 10.

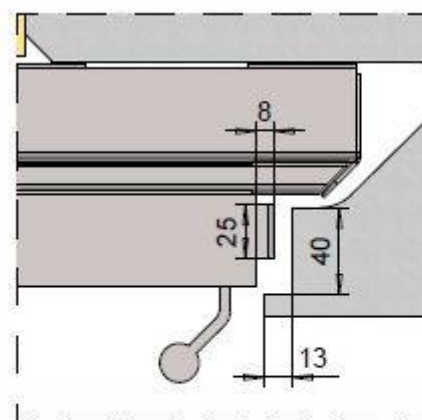
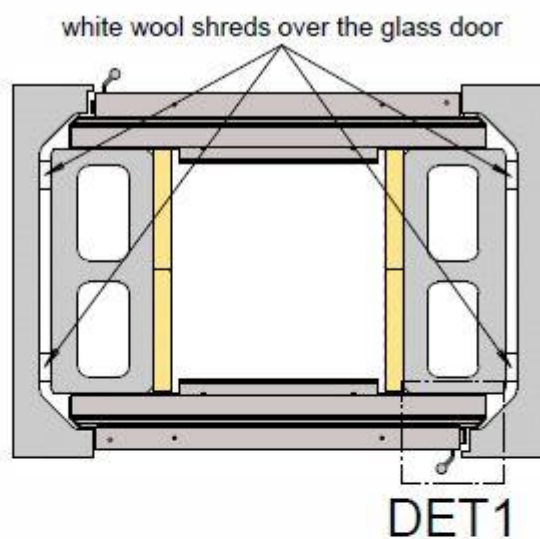
Put fire-resistant masonry mortar between inner elements. Fireplace is preferred to be built 8 layers before sliding air pipings to the right position. Each piping system needs 65 mm airspace. Check after every layer that there's enough space for air piping systems!

Fire chamber's ceramic plates can be installed after installing the air piping system although ceramic plates are recommended to be installed after the whole fireplace is coated and other ways ready to use.

7

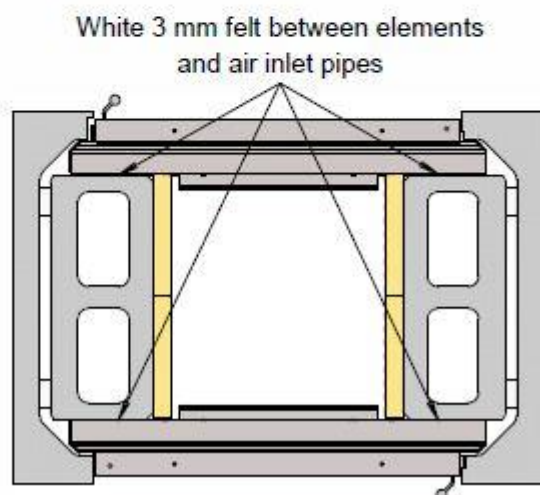


8



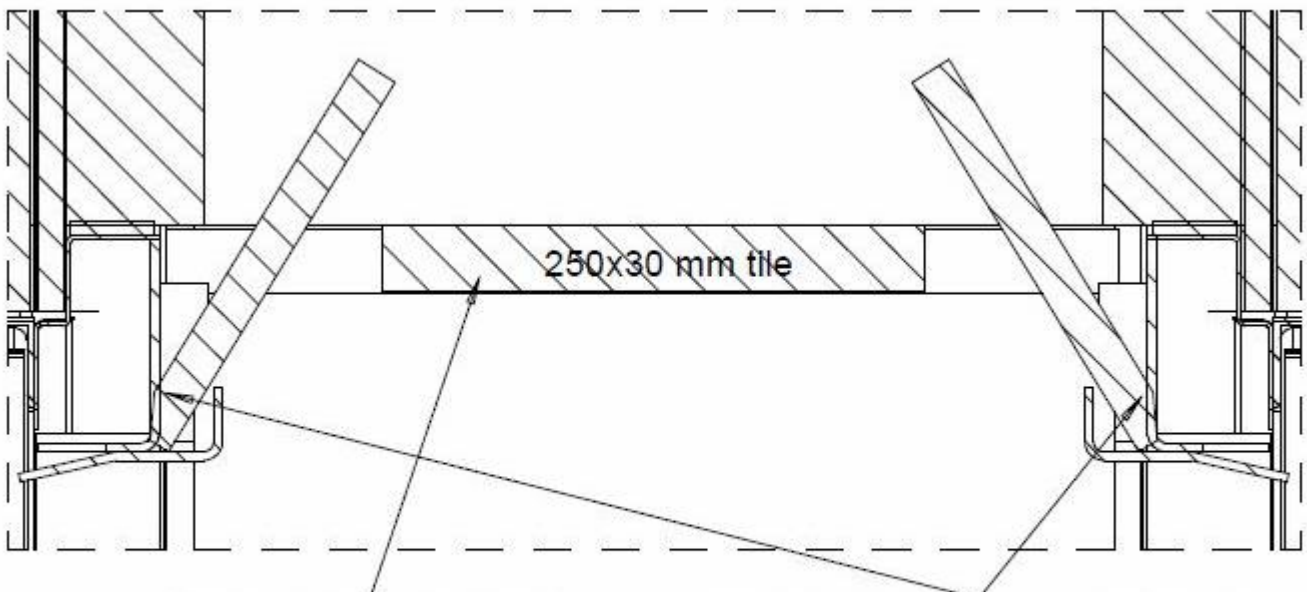
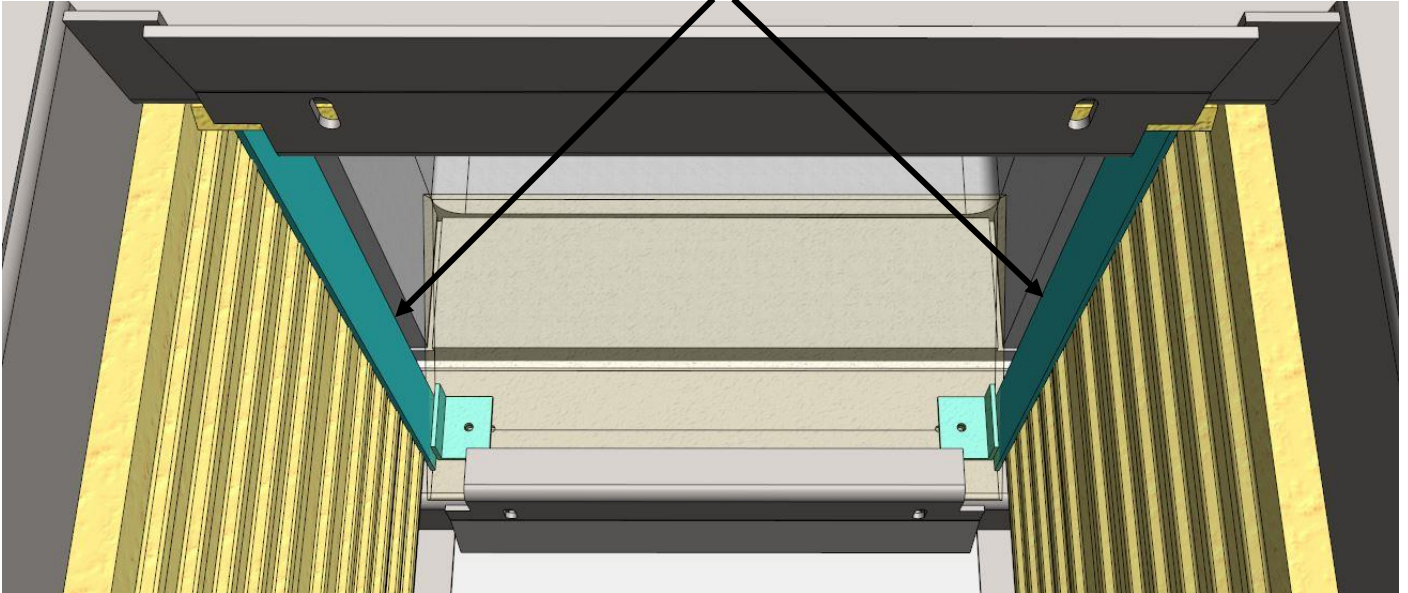
DET1
1:5

9



Installation of metallic supporter plates 3D

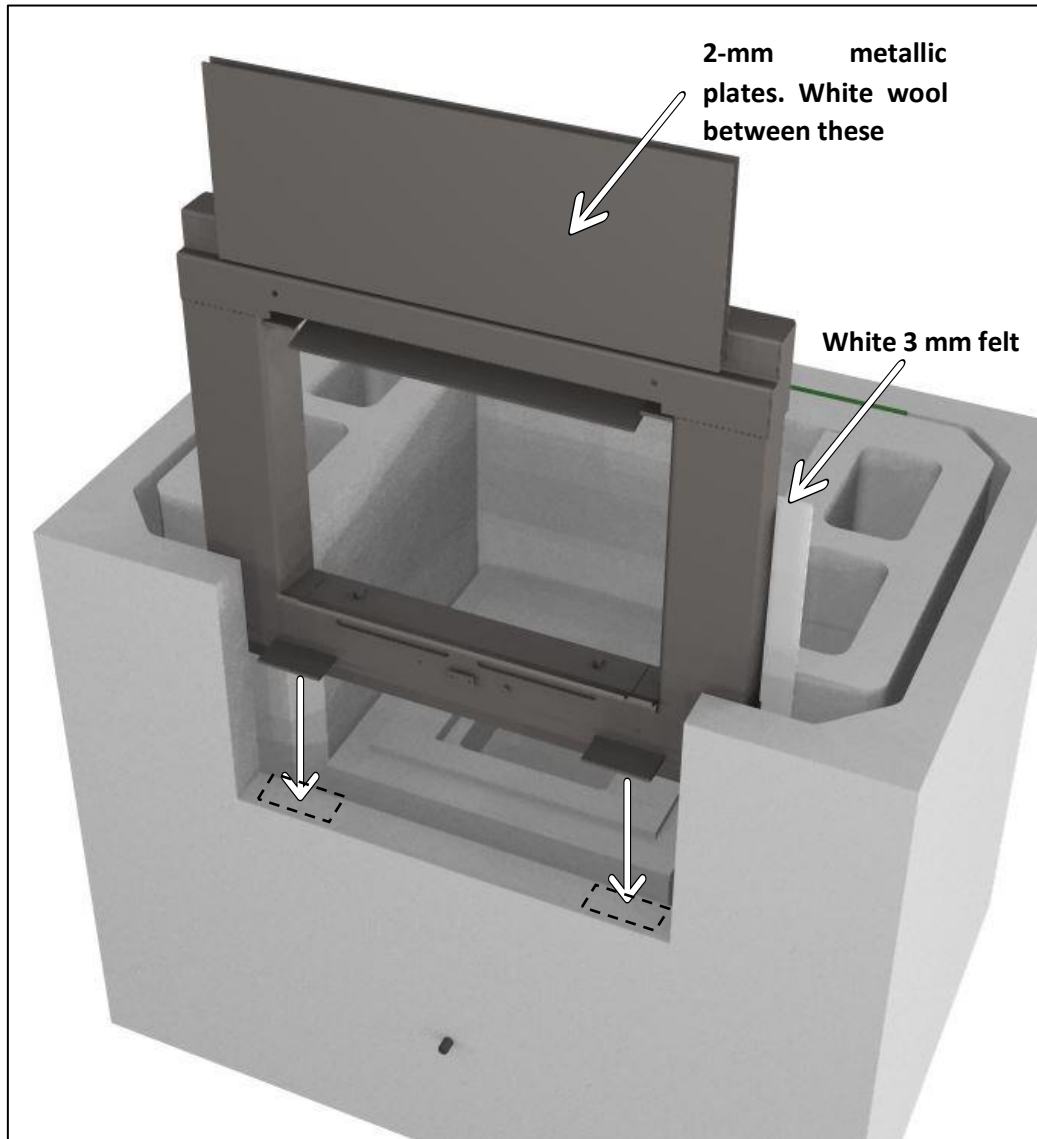
Supporter plates are marked with blue color



Horizontal vermiculite tile comes over the L-shaped metal that is over ceramic side plates.

Vermiculites may have to be cut

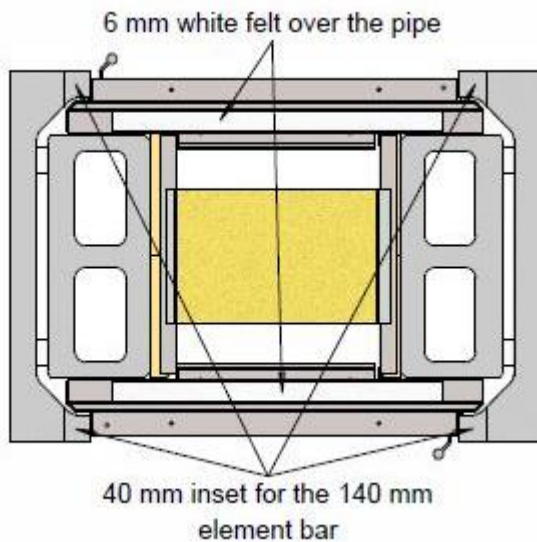
SLIDING AIR PIPING SYSTEM INTO THE FIREPLACE



Air piping system must be slid in when installing the elements of the fireplace. Put 3 mm white felt between the inner elements and the piping system. This makes structure sturdier. Check with the spirit level that the structure is horizontally straight. There are adjustable air holes in the structure under and above the glass door. Adjust these holes if needed. There are holes in the structure for attaching the glass door with bolts. Attach the glass door with the frame when the whole fireplace is coated, and the surface is dry. Put white 10 mm wool between elements' air gap over the glass door. This 500 mm high white wool should be installed between two 2-mm metallic plates that comes within the delivery. This wool insulates the gap between elements and covers elements getting too hot.

In tunnel models the air piping system is installed on both sides of the fireplace. Make sure that there is enough space for both piping systems. Each piping system needs approx. 65 mm space. Follow layer pictures and remember to put white felt between elements and air pipings.

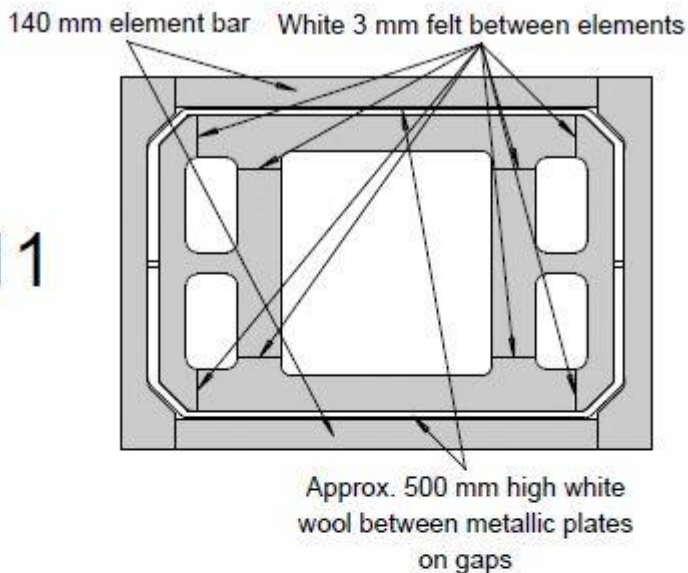
10



The height of the glass door is approx. 450 mm. Put 6 mm white felt over glass door's air piping.

There are 40 mm insets on outer elements for the 140-mm high element bar that comes over the glass door (see layer 11 for element bars). Attach the bar with the renovation mortar.

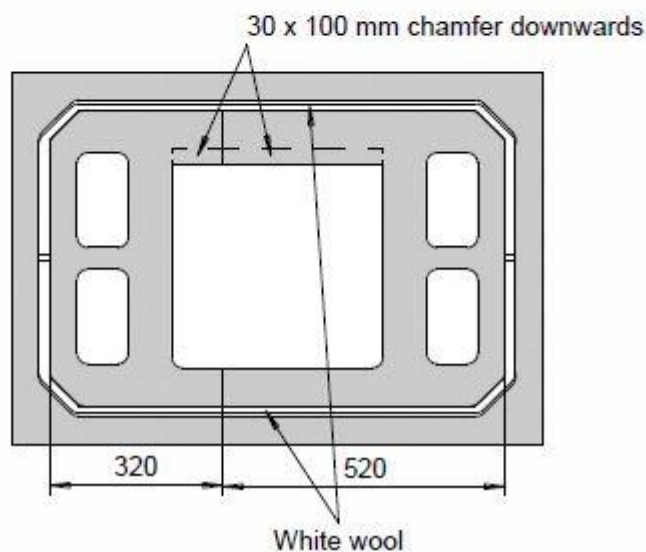
11



Put 3 mm felt between inner element bars and inner elements. **Leave these element bars unattached! Mason other elements normally.**

White ceramic wool is to be set to the top of the glass door horizontally, so the airspace between elements is tightened also from the upper side of the glass door. These wools are supposed to almost reach the midway point on both sides of the fireplace. White wool goes between metallic plates on both front and backside of the fireplace.

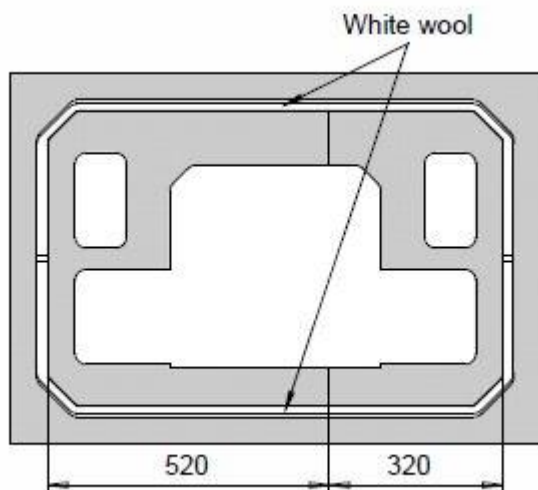
12



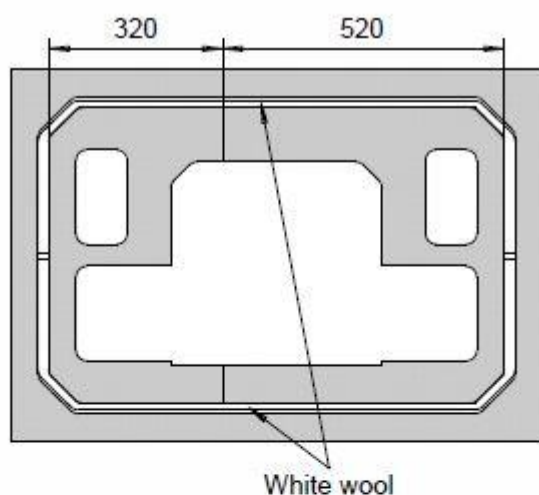
Remember to add white wools all the way up.

Layers 12, 13 and 14 consists of two inner elements. Zigzag these elements (see drawings 12-14).

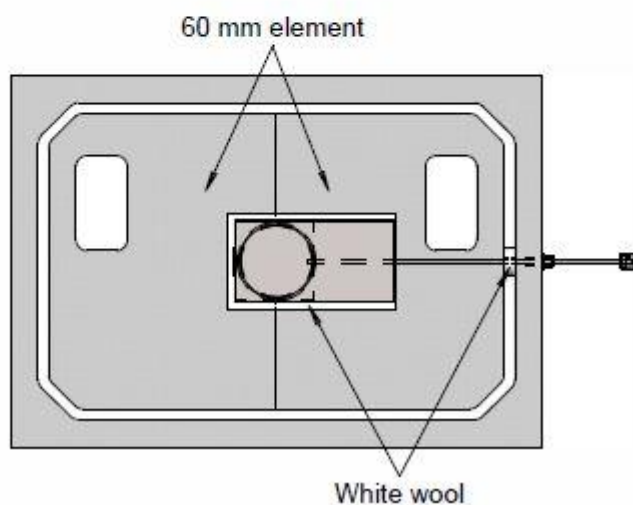
13



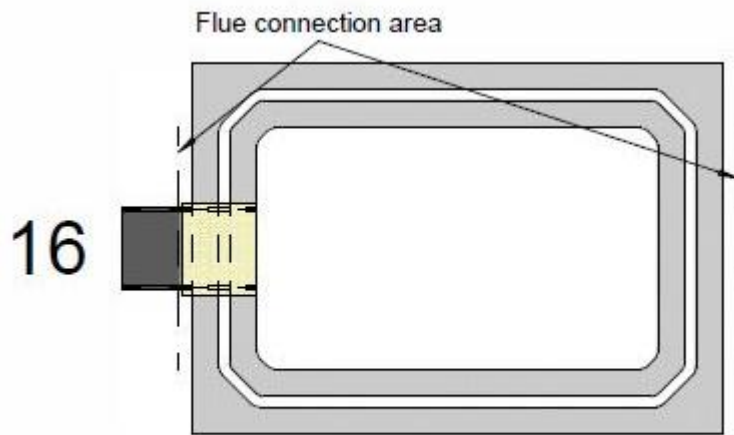
14



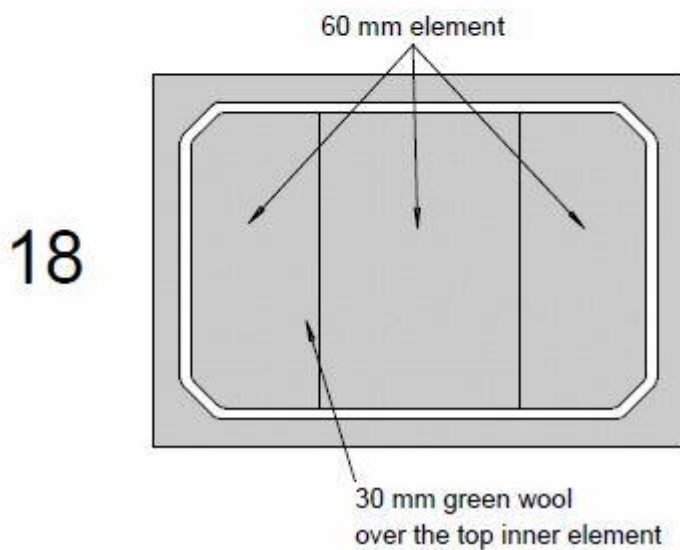
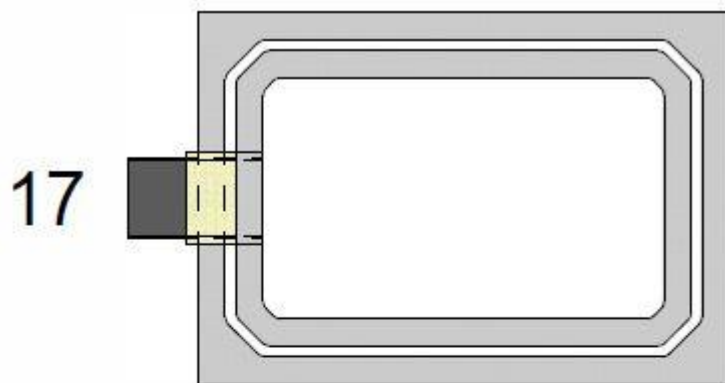
15



In the middle of the inner element there is a hole for an ignition plate. The plate is installed collar downwards to the hole. Put white wool under the plate for insulation. Ignition plate can be turned either left or right side of the fireplace. The bar of the ignition plate is recommended to be shortened during the installation of the plate. Notice the thickness of the surface material when cutting plate's bar. **Put white wool for insulation around the plates bar between inner and outer part.**

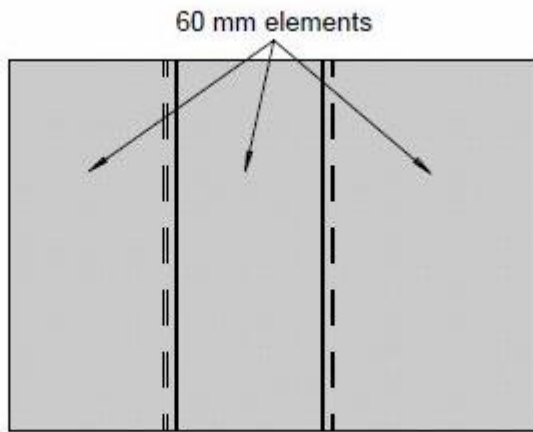


Inner element must be cut or drilled for the ignition plate's bar. Remember to put white wool around the bar for insulation.



The top of the inner part is the last layer that is masoned with fire-resistant masonry mortar. 30 mm cover wool is installed over the inner element. Cover wool should condense the lower part of the fireplace.

19

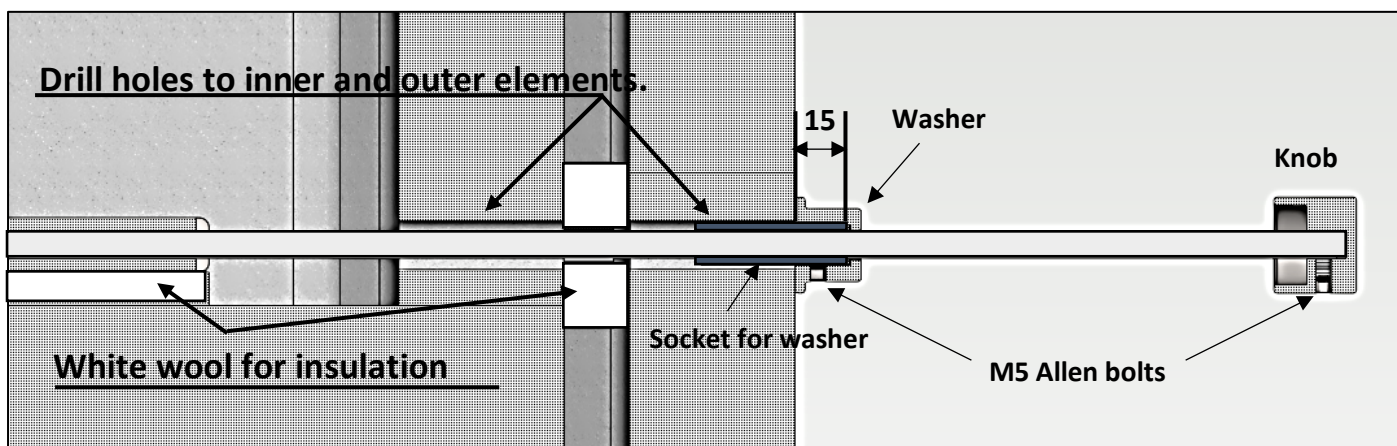


Mason top elements of the fireplace with renovation mortar. These elements must be raised by at least two installers.

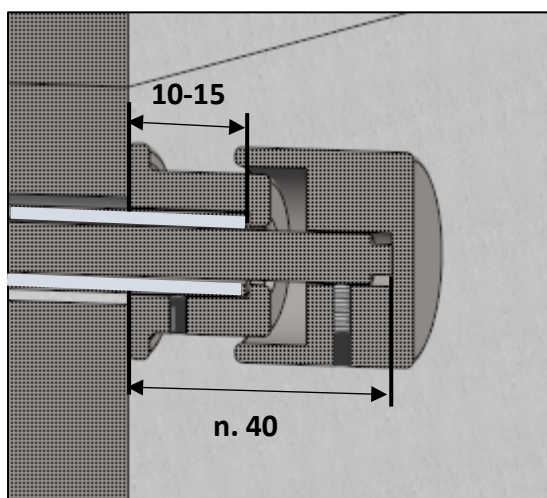
Installation Manual for Damper plates

There must be done holes for an ignition plate and a damper plate (optional) when installing the fireplace.

Remember to put white ceramic wool under the ignition plate and around the plate's arm between the inner and the outer element for proper insulation. A little bigger hole than the arm's socket must be drilled to the outer element (outer diameter of the socket is 12 mm) so the socket can be glued to the fireplace. The socket can be glued to the fireplace with for example renovation plaster. Inner element's hole must be little bigger than the plate's arm itself.



Drawing 1. Part names, wool locations and holes for plate's arm



Drawing 2. The installation measurements of the washer and the knob

The arm of the ignition plate (or damper) must be shortened before the final installation. Take care that the thickness of the surface material is also included into the measurements. The arm of the plate should come out from the surface approximately 40 mm. How the knob should reach over the washer and right dimensions are shown in "Drawing 2".

The socket for the washer should come out 10-15 mm from the final surface material. This part of the socket can be taped over for the time of installing the surface material so it will stay clean. Let the plaster and the surface get dry before installing the washer over the socket. The Allen key is needed when installing the washer and the knob. Tighten parts so that Allen bolts are pointing downwards.

LINNATULI

ADA TUNNEL

Installation guide

General

The person installing the fireplace must have sufficient professional skills as well as knowledge about regulations relating to fireplaces and flues. (Such as The National Building Code of Finland E8: MASONRY FIREPLACES and E3: SMALL CHIMNEYS) Any national or local regulations, and codes of practice, shall be complied with.

The fireplace height **may differ** from the height in the instructions, (approx. 1800 mm). Ensure the correct installing order. Contact the manufacturer if required.

Technical info Ada Tunnel High/Top connection

Essential Characteristics	Performance		Harmonized technical specification
Fire safety	pass		EN 15250:2007
Recommended fuels	Wood logs		
Minimum distance to combustible materials	Side wall: (cm)	5	
	Back wall: (cm)	5	
Emission of combustion products (related to 13% O ₂)	CO: (vol%)	0,07	
	CO: (mg/m ₀ ³)	917	
	Dust: (mg/m ₀ ³)	38	
	C _x H _y : (mg/m ₀ ³)	59	
	NO _x : (mg/m ₀ ³)	112	
Flue gas temperature	°C	172	
Flue gas temperature at flue connection in nominal test circumstances (mean)	°C	182	
Thermal Output	kJ	160	
	kW	44	
Thermal storage capacity	50% of max: (h)	12	
	25% of max: (h)	20	
Energy efficiency	81,4 %		
Flue draught	Pa	12	
Weight	kg	1800	
Log length	cm	38	
Maximum weight of a batch	1 st batch (kg)	6	
	2 nd batch (kg)	3	
	3 rd batch (kg)	3	
Maximum number of batches	3		
Combustion time	2 hours		
Flue gas mass flow	(g/s)	31	

Base

The fireplace must be built on an immovable and fireproof stone base. Before installation, ensure that the base can support the weight of the fireplace and the flue.

Safety distances and the fire wall

The required safety distances from the structures containing burning material must be ascertained before installation.

- The safety distances are: To the side and behind: 50 mm, up: 100 mm, down: 50 mm and to the front: 1000 mm.
- A metal plate or other fireproof material must be placed on the floor in front of the fireplace; 400 mm from the front surface and 100 mm to the sides of the fireplace door.

The fire wall can be built either from bricks or light gravel blocks. There must be a space of at least 20 mm between the fireplace and the fire wall for ventilation.

Replacement air

Replacement air must be taken care of, so that good draught can be ensured. Replacement air can be taken from outside under the fireplace if wanted. Replacement air can also be taken from inside but then there must be holes sawed to bottom elements. Extractor hood and central vacuum cleaner are not recommended to be used while using a fireplace, if ventilation system does not include pressure leveling system (for example ventilator's fireplace switch). Ventilator's fireplace switch adds room's excess pressure only temporarily.

If necessary, a window can be opened for the time of ignition. After woods have ignited, the draught usually improves so much, that window can be closed.

Make sure that ventilation holes of the fireplace stay clean. It is recommended to test the motility of the ventilation holes at times.

Flue

The fireplace is available with a flue starting from the top of the fireplace or from the side on the top. Only a light steel flue can be installed on top of the fireplace.

The size of the flue hole in round flues is 150 mm. The fireplace can also be connected to a ½-brick (150x150 mm) flue or to a bigger flue. The total size of the flue must be at least 5 m (in top connecting model fireplace + flue together). Follow the safety distances provided by the flue manufacturer.

The flue must be swept annually and a sweeping hatch must be installed into the flue whenever possible. The flue must have a damper. In the top connecting model the optional damper is in the fireplace over the top inner element. When installing into an old flue, the flue must be swept and its condition checked at the same time. The chimney sweep or the bricklayer must ensure that the flue is connected to the correct flue and that there is sufficient draught in the flue. The possible connection points for the flues are shown in the installation guide scans. The flue joint must be sealed up carefully using mineral wool or ceramic wool. The fireplace delivery will always include a steel flue connection pipe or a flue connection adapter in top connecting models.

Storage, installation temperature

During storage the product must be protected from freezing, because the water inside the elements may scratch them if it freezes. The installation temperature must be at least 10 °C. During winter the elements must be brought into the warm indoors at least 1-2 days prior to installation.

Fireplace installation

The polystyrene fillings in the casting element (smoke flues, grill etc.) must be removed carefully before installation. With some fireplace models the polystyrene has been removed in the factory. It is advisable to protect the work area with plastic, for example, for easier cleaning. It is easiest to remove the fillings by striking with a plastic hammer or a wooden mallet. If using a metal hammer be careful not to damage the elements. If required, the element sides can be finished with a grindstone.

Take the waste to an appropriate place, such as the to the collection point for waste to be incinerated. Clean the elements carefully before installation. If an element is damaged it can still be installed in the fireplace. The damaged surface is tidied up and glued using plaster, just like the gaps between the layers.

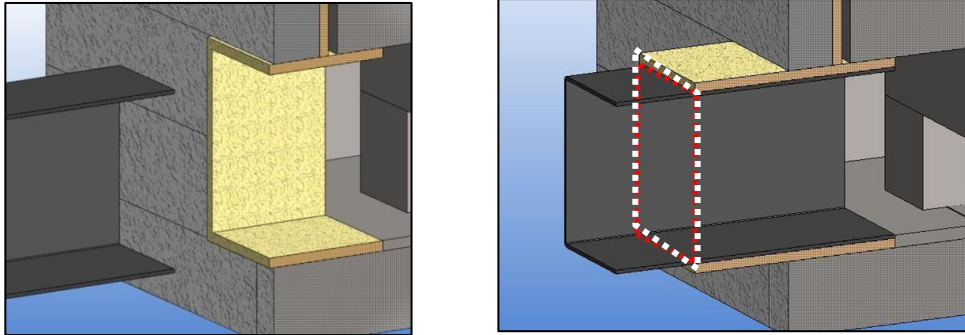
Cement mortar is used between outer layers and fireproof mortar between inner layers. Read the user manual for mortars before installation. The fireproof plaster can be relatively runny and it is spread by pouring a narrow layer in the middle of the stone. When using both mortars the seam must be filled to make sure that the seams are sealed. After the element is installed, the stone is tapped carefully using a rubber mallet in order to establish the correct seam strength (1-2 mm) and straightness.

After installing each element use a spirit level to check that it remains straight. If the stone must be moved sideways, do it by cranking it with a knife edge, for example, not by pushing or tapping, because otherwise the lower layers may also move. If needed, use metal washers to straighten the elements and fill the seam carefully afterwards. Clean the plaster residue immediately while working. Smoke flues must be levelled during the installation work at a few layers at a time. It's a good idea to use a damp brush, long-handled paintbrush or a sponge when finishing the flues. It is also advisable to wash the seams with a sponge after installation. Thus the fireplace will look neat.

If required, you can install triangle corner pieces to the outer corners using cement mortar, in order to make the corners sharp. Corner elements are about 50 cm long. Corner pieces are not needed if you want a slanted front corner, nor in the rear corner of corner models. Corner pieces can be sawn to shorten them, if required. Corner pieces belong only to Juhana and Maria fireplaces with variations.

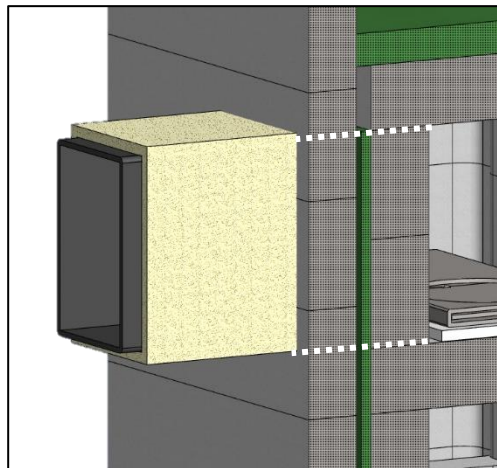
Flue connector

In models with low connection the third and the fourth layer needs to be cut for the pipe. There is always a connection pipe or connection adapter in the delivery. Connection pipe belongs to low and high connection models when connection adapter belongs to the top model. The hole for the connection must always be done for both inner and outer element at the construction site. The connection pipe must be shortened with a saw at the construction site (if needed) and isolated with wool. Use PAL10 (green) wool or ceramic (white) wool as a seal. Make sure that connection pipe is surrounded on ends, flue and fireplace.



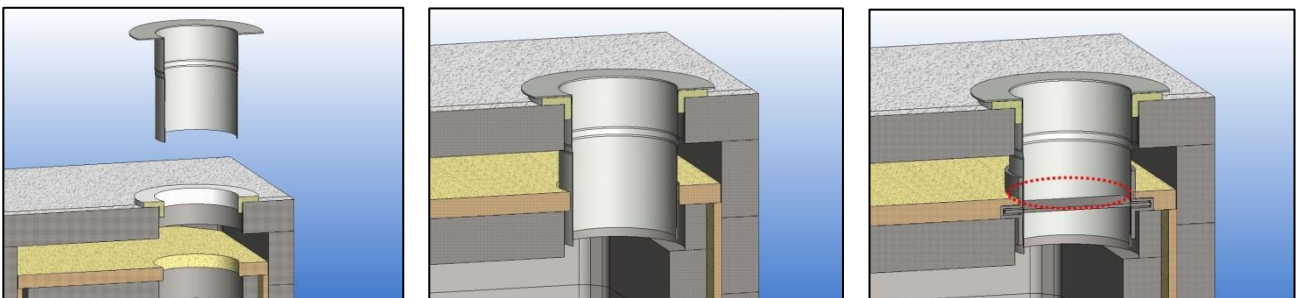
Low connection model

In models with high connection the hole for pipe must be made right after ignition plate's layer. The hole may be located in 3 outer layers. Check the location from the drawings. The top element of the inner part will be installed after circular layers. This element is the last element where fireproof mortar must be used. On top of this layer must be put 30 mm fireproof wool.



High connection model

In models with top connection the hole for the adapter is already made by the manufacturer. Flue connection adapter is to be installed male part downwards. Adapter must be sealed with white ceramic wool. Adapter may have to be shortened, so the lowest point of the adapter won't reach the lowest point of top inner element. If the smoke damper (optional) belongs to the delivery, the adapter must be shortened to the level of the smoke damper. The smoke damper belongs on top of the top inner element. Put white wool under the smoke damper and cut an embedding to the 30 mm fireproof wool for the damper. Drill a hole for the damper's arm to the outer element. The smoke damper can be turned either the left or the right side.



Top connection model

Levelling and netting the fireplace surface

Wipe the fireplace surface with a metal spatula in order to remove plaster residue and uneven bits. After this you can cut suitable pieces from the fibreglass netting for the fireplace surface. The netting should be measured to leave it 1–2 cm short in the edges. Thus the netting edge does not interfere with the levelling and coating work.

The fibreglass netting is attached to the fireplace surface tightly using cement mortar. The mortar is spread evenly across the netting with a metal spatula and pressed tightly onto the fireplace surface. After levelling any residue and other lumps which interfere with coating are removed.

You can coat the surface with antique plaster, tiles, or other stone materials according to your choice.

Antique plaster coating

We recommend that you coat the fireplace surface twice with the antique plaster. First spread a thin even layer of plaster on the surface. The surface can still be levelled when spreading the first plaster layer. Even surface provides a better end result. After the surface is dry it is honed even.

The second plaster layer is spread as a thin and even layer on the fireplace surface. The plaster may dry quickly, depending on the conditions and the surface dryness. The surface is coated either all at once or one side at a time. The antique plaster coating is finished either with a sponge or abrasives. The coating can also be finished by brushing, or with a paint brush or with a roller.

If the antique plaster surface dries too much before the final coating, the surface can be dampened lightly using a spray bottle.

Tile coating

Tiles are fixed on the fireplace surface using cement mortar. The tiles included in the delivery are cut on site. The fireplace instructions may include a preliminary tile distribution. The tile distribution must be checked after delivery depending on the height of the fireplace, and changed if necessary. The seam size of tiles is about 3 mm.

The tiles are grouted with the grout supplied, according to the tile colours.

Fastening the fireplace door

The fireplace door is recommended to be sled in to the fireplace when installing levels of the fire chamber together with an air piping system. If the door is not yet assembled with the air piping system it can be attached to it with 4 metallic bolts. Ensure that the air piping system (and the fireplace door) is straight with the spirit level and that there are 3 mm white felts put between inner elements and the air piping system. Use 20-mm metallic frames to finish the installation of the fireplace door. These frames are attached with 4 bolts/screws that belongs to the door packet. After the installation of the frame there is a neat surface around the door in the finished fireplace. Remember to condense the space between fireplace door and the element with wool. Leave enough space for wool around of the fireplace door. Remember the thermal expansion when fastening the door. Tighten metallic bolts after using the fireplace a few times if necessary.

Cleaning and handling the fireplace

Sweeping the fireplace must be done at least once a year. Sweeping hatches can be found under the fire chamber. Detach the grate and the ash box to see sweeping hatches on both sides of the air control plate. In optional version detach the middle ceramic plate on bottom of the fire chamber. Sweeping hatches are on sides of the air control plate space. Sweeping of the fireplace and the flue must always be done by a professional.

Clean ashes from the chamber always before following combustion process. Make sure that air can flow freely from every air gap to the fire chamber. This way combustion stays as clean as possible.

It is recommended to keep installation and user manuals with layer pictures for sweeper.

Sweeping guide:

The cheek funnels and back funnels are to be swept through sweeping hatches on sides of the air control plate. It is recommended to use pipe cleaner with spring made of nylon. More specific pictures of the structure are found in layer pictures of the fireplace.

Guide for sweeping the flue can be found flue's manufacturer's user guide.

Cleaning the glass door:

Soot must be swept off the glass often enough, so it won't burn into the glass. The easiest way to clean door's glass is to dip wet newspaper in the ashes of the ash box and swipe the soot off carefully with it.

Related with usage

When the fireplace will not be used for a long time the damper and the air control unit of the fireplace door must be closed. When usage of the fireplace continues it must be checked that flue is not blocked by for example birds nest. If there is a very bad weather, flues of the fireplace can be heated with for example hairdryer or paper so the draught gets better.

Take contact to your fireplace manufacturer or technical info for further questions.

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ADA TUNNEL

User guide

NOTE BEFORE USING THE FIREPLACE

- **Always when using a fireplace, the replacement air must be taken care of. 1 kg of firewood needs approx. 8-10m³ of air for combustion.**
- **Let fireplace get dry with fireplace door and smoke damper open at least 2-3 weeks. Drying can be faster when using a fan heater. Make sure before igniting first batch of woods that fireplace's flue channels are dry. If there's moisture in channels, drying must be continued without fire.**
- **Before burning the first batch of wood, must be ensured that sweeping hatches are in right places. These places can be found for example from the layer pictures of the installing manual.**
- **Start heating using very small batches of firewood (approx. 0.5 kg) once a day for a week. First batch must be burned with ignition plate open (only top connection model). After 7 days amount of wood can be added approx. 1 kg once a day. At the drying phase leave the smoke damper open, so all moisture can exit freely.**
- **Fireplace's too fast heating may damage the fireplace and shorten its working life.**
- **Notice that if a fireplace has been long time without usage, the heating must be started carefully, so the moisture that has accumulated to elements won't harm the appliance.**
- **In any case, the moisture cannot be condensed to inner surfaces of the fireplace while heating!**
- **Remember CO-danger. Do not close the smoke damper too soon.**
- **Fireplace is not suitable for shared flue. There must always be flue for each fireplace.**

Replacement air

Replacement air must be taken care of, so that good draught can be ensured. Extractor hood and central vacuum cleaner are not recommended to be used while using a fireplace, if ventilation system does not include pressure leveling system (for example ventilator's fireplace switch). Ventilator's fireplace switch adds room's excess pressure only temporarily.

If necessary, a window can be opened for the time of ignition. After woods have ignited, the draught usually improves so much, that window can be closed.

Make sure that ventilation holes of the fireplace stay clean. It is recommended to test the motility of the ventilation holes at times.

Beginning

Let fireplace get dry with fireplace door and smoke damper open at least 2-3 weeks. Drying can be faster when using a fan heater. Make sure before igniting first batch of firewood that fireplace's flue channels are dry. If there's moisture in channels, drying must be continued without fire.

Before igniting the first batch of wood, it must be ensured that sweeping hatches are in right places. These places can be found for example from the layer pictures of the installation manual.

Start heating with very small batches of firewood (approx. 0.5 kg) once a day for a week. First batch must be burned with ignition plate open (only top connection model). After 7 days amount of wood can be added approx. 2 kg once a day. Leave the smoke damper open at the drying phase, so all moisture can exit freely.

Fireplace's too fast heating may damage the fireplace and shorten its working life.

Notice that if fireplace has been long time without usage, heating must be started carefully, so the moisture that has accumulated to elements won't harm the appliance.

In any case, the moisture cannot be condensed to inner surfaces of the fireplace while heating!

Permitted fuels

Use most preferably as dry wood as possible. Burning trashes (card board, paper, burnable packaging materials) in the fireplace is not recommended. Do not burn coal, briquettes or other materials incl. liquid fuels that may include toxic gases in the fireplace. Wooden briquettes and pellets are allowed in small quantities.

Any national or local regulations, and codes of practice, shall be complied with.

Find maximum wood quantities for each fireplace from the table below.

FIREPLACE	WOOD AMOUNT (max./d) (kg)	WOOD LENGTH (cm)	MAXIMUM HEIGHT OF BATCH (cm)
IDA	4.5+2.5+2.5	28	25
ADA	6+3+3	38	30
ADA TUNNEL	6+3+3	38	30
EMILIA	6+3+3	38	30
ELISE	6+4+4	38	30
Maria	2+2+2	25	20
Iso-Maria	2+2+2	25	25
Juhana	4.5 +3+3	30	25
Kulma-Juhana	4.5+3+3	30	25
Iso-Juhana	7+3+3	33	28
Aino	6+2.5+2.5	30	25
Anna	6+4+4	33	28
Anna Tunnel	6+3+3	33	28
Johannes	2.5+2.5+2.5+2.5	33	25
Iso-Johannes	6+3.5+3.5	33	28
Wilma	3+2.5+2.5	25	28
Piccolo	3+1.7	25	28

FUEL	HEAT VALUE (kWh/kg)	ENERGY DENSITY (kWh/loose-m³)	ENERGY DENSITY (kWh/pile-m³)
Pine	4,15	810	1360
Spruce	4,10	790	1320
Birch	4,15	1010	1700
Alder	4,05	740	1230
Aspen	4,00	790	1330
Wood pellet (moist < 10 p-%)	4,8	3,1	
Wood briquette (moist < 10 p-%)	4,8		

Never use wet wood or too small draught, because flue channels can get dirty and as a result can be dangerous chimney fire. In case of chimney fire, the local fire department must be called immediately.

Chimney fire

Too wet or low-quality wood as a fuel can send sparks through the appliance all the way to the chimney. These sparks can influence a chimney fire. (With regular sweeping this kind of cases are very uncommon.)

If the chimney is on fire, can it be seen in flames, in chimney's blaze, in sparkles with heavy smoke through chimney and harsh smell of a smoke. Also, chimney's sides feel hotter than normal.

In the situation mentioned above it is important to react right. Call fire department and report for a fire. Inform also the chimney sweeper. Take flammable objects away from around the chimney. Before the fire department has arrived do not throw any water on the appliance. Temperatures in chimney fire can rise to 1300 °C. The water thrown to the flames would evaporate immediately and for example 10 liters of water were to become 17 m³ of steam. The pressure that would be formed could tear the whole chimney.

Storing firewood

Woods are recommended to be stored in wintertime. Woods are suggested cut to logs, so drying is faster. It may take even 2-3 years before woods have dried to the level where the moisture content has dropped to 15-20%. Logs from fresh wood are not to be maintained for example in the basement or in the garage. Do not even wrap woods with plastic, for example tarp, because air cannot run through the logs at then. Store logs in an area that has a good air conditioning and is protected from the rain.

Using the fireplace

Begin the burning process by opening a smoke damper that is in the chimney or in the fireplace. Open the ignition damper if necessary (in cases when chimney is cold or fireplace hasn't been used in a long time.)

Lay firewood and primers sparsely to the center of the fire chamber so, that they leave clear gaps to fireplace doors. Open combustion air's switch at least 15 mm outwards according to "*Burning guide*" (page 8). It is recommended to ignite the batch from the top center. This way fine particle emissions are smaller. Bringing firewood near to the fireplace one day before burning is also recommended.

For creating a draught, the fireplace door must be closed right after ignition. After woods have ignited and draught has been created, the ignition damper must be closed.

The glass door and the handle will become burning hot when batches are burning. Protecting glove belongs in to the fireplace delivery. Use this glove always when handling the fireplace.

When there are only embers left, adding second batch is possible. Check recommended wood amounts for your fireplace from the table upon. Remember to open door slowly when adding the new batch. When door is opened quickly, especially bigger doors may leave smoke to the room. Ignition damper can be opened for a few moments when door is opened, so possible negative pressure does not make easily problems for the draught. Ignition damper must be closed right after closing the fireplace door.

The most stable final heating result can be reached with burning one batch by morning and one by evening.

Close the damper after embers have turned from red to black.

When the fireplace will not be used for a long time the damper and the combustion air switch must be closed. When usage of the fireplace continues, it must be checked that the flue is not blocked by for example bird's nest. If there is a very bad weather, funnels of the fireplace can be heated with for example hairdryer or paper so the draught gets better.

Cleaning the ash

The ash box must be cleaned at times so burning air can get through the grating. Air makes grating colder and it can be damaged if the air is not given. Clean glass doors from the appliance according to manufacturer's guide. Cleaning of ashes is recommended to be done always before starting the new burning period.

How to clean ash box:

Option 1:

Detach the grate with a special tool that comes within the delivery. Lift the ash box out from the fire chamber and dump ashes to fire safe environment, for example to a metallic bin. After two days, ashes can be moved in to the nature to the place designed for ash.

Put ash box back to the same place and position. Make sure that the ash box is left loose to the gap and put the grate back on it. Look that there are no embers or ashes fallen under the ash box. Clean that space under the ash box with for example vacuum cleaner designed for cleaning ashes if there are some embers or ash. This way the function of the air control switch can be secured.

Option 2:

The grate and the ash box is replaced with a bottom element that is situated on the center of the fire chamber. Clean the chamber with tools that are meant for cleaning fire chambers. For example, shovel can be used to take away bigger embers and vacuum cleaner designed for cleaning ashes for smaller particles left in the chamber.

It is recommended to make sure there are no embers or ash fallen to the space under the bottom element. After cleaning the fire chamber the bottom element can be taken off. Clean that space under the ash box with for example vacuum cleaner designed for cleaning ashes if there are some embers or ash. This way the function of the air control switch can be secured.

Draught of the flue

Modern fireplaces require more from the flue compared to old fireplaces. If the flue is wrong sized or too seedy, draught can suffer very much. Draught consists of flue gas temperature, of exterior temperature, of weather, of amount of brought air and size of the fireplace. Connection to the flue must be tall enough compared to inner measures of the flue. CE shield demands that draught for a flue is 12-25 Pa.

The draught of the flue gets better when height of the flue grows, or flue gets warmer or more air is guided to the fire chamber.

If flue's diameter is too big or flue has wrong height take contact to a professional. Take always care that fireplace's temperature class do not cross flue's temperature class.

Cleaning and handling the fireplace

Sweeping the fireplace must be done at least once a year. Sweeping hatches can be found under the fire chamber. Detach the grate and the ash box to see sweeping hatches on both sides of the air control plate. In optional version detach the middle ceramic plate on bottom of the fire chamber. Sweeping hatches are on

sides of the air control plate space. Sweeping of the fireplace and the flue must always be done by a professional.

Clean ashes from the chamber always before following combustion process. Make sure that air can flow freely from every air gap to the fire chamber. This way combustion stays as clean as possible.

It is recommended to keep installation and user manuals with layer pictures for sweeper.

Sweeping guide:

The cheek funnels and back funnels are to be swept through sweeping hatches on sides of the air control plate. It is recommended to use pipe cleaner with spring made of nylon. More specific pictures of the structure are found in layer pictures of the fireplace.

Guide for sweeping the flue can be found flue's manufacturer's user guide.

Cleaning the glass door:

Soot must be swept off the glass often enough, so it won't burn into the glass. The easiest way to clean door's glass is to dip wet newspaper in the ashes of the ash box and swipe the soot off carefully with it.

Safety

Never use the fireplace with another fireplace attached to the same flue at the same time.

Fireplace heats up through the burning period and even after it. When burning bigger batches even the plaster surface can become hot. Glass door becomes burning hot while woods are burning. Glove belongs in to the fireplace delivery. Use this glove always when using the fireplace.

If it feels that fireplace is overheated, close the air control unit by pressing it towards the surface of the fireplace. Open the ignition plate and leave the damper plate open. This way all heat runs straight to the flue and out through it. When combustion does not have any oxygen it will weaken. Let logs burn until the end.

Pay attention to minimum distances towards combustible materials incl. furniture and fire woods when using the fireplace. All combustible materials at immediacy of the fireplace must be protected from the fire. Obey local laws and orders.

Do not leave the fireplace alone whilst combustion or do not close the damper before all the embers are flamed out. Latter case can cause for example carbon monoxide poisoning.

Keep the glass door of the fireplace generally closed, so smoke does not pervade into the room. The glass door can be opened during adding wood and during cleaning the ash.

Handling packaging waste

Deliver packaging waste of the fireplace to the dump's waste burning point. This way all material will be recycled in the form of new energy. The EPS material and cover plastics may not be burned in the fireplace.

Tightening the glass door

Screws of the glass door must be tightened at times. Tighten screws with a screwdriver after burning few batches. Tighten glass door at least twice per half year.

Terms of guarantee

Do not make any changes to the capacitive fireplace without manufacturer's approval. Changes in the fireplace may lead lapse of the guarantee. Faulty parts must be replaced with parts approved by the manufacturer.

FAQ

The glass door gets black quickly and uneven?

If this problem has not appeared from the beginning, pay attention to following things:

- Have you used appropriate firewood? Firewood must have a right moisture and the amount must be correct.
- Is the combustion air switch open? What happens if you open it more?
- There is no replacement air incoming to your fireplace? (Take contact to your fireplace installer.)
- Flue does not have enough draught? Check that flue is not blocked.
- Does the door soot quickly/in a half hour? It is normal that fireplace door gets black within time.

Batch catches fire poorly and very slowly?

If this problem has not appeared from the beginning, pay attention to following things:

- Have you used appropriate firewood? Firewood must have a right moisture and the amount must be correct.
- Is the combustion air switch open? Pull it fully open for the time of ignition.
- There is no replacement air incoming to your fireplace? (Take contact to your fireplace installer.)
- Flue does not have enough draught? Check that flue is not blocked.
- Check the gaps in air inlet pipes around both glass doors. These gaps can be adjusted with a screwdriver.

Smoke comes inside the room when burning the fireplace?

If this problem has not appeared from the beginning, pay attention to following things:

- Have you used appropriate firewood? Firewood must have a right moisture and the amount must be correct.
- Is the combustion air switch open? Pull it fully open for the time of ignition.
- There is no replacement air incoming to your fireplace? (Take contact to your fireplace installer.)
- Have you opened the glass door slowly? Door can be opened to ajar position for ~10 seconds before opening it properly.
- Is the glass door loose? Tighten the bolts in the door and check the sealings.
- What is the condition of the sealing of the door? Fire wears sealing through time.

Is the wood consumption too high?

If this problem has not appeared from the beginning, pay attention to following things:

- Have you reduced the amount of the replacement air? Do it by pressing the combustion air switch nearer the surface of the fireplace.
- Check the gaps in air inlet pipes around both glass doors. These gaps can be adjusted with a screwdriver.
- Is the glass door closed properly?
- Do you burn right amount of wood?
- Is firewood dry enough? (Moisture under 20%.)

Take contact to your fireplace supplier/manufacturer if these problems keep coming.

More information

For more information, take contact to your fireplace supplier/manufacturer.

ADA TUNNEL BURNING GUIDE

Open the smoke damper and the ignition damper if the fireplace includes one. The batch must not be ignited before at least the smoke damper is open!



Picture 1.



Picture 2.

Referred weights of batches:

- 1st batch 6.0 kg (≤ 0.5 kg/piece)
- 2nd batch 3.0 kg (~ 1.0 kg/piece)
- 3rd batch 3.0 kg (~ 1.0 kg/piece)

Lay pieces of firewood to different layers. Bottom layer should consist biggest pieces of firewood and these pieces should have little gaps between each other. Put next layers of firewood to different angles like shown in picture 1.

Lay rest of the first batch lengthwise as evenly as possible. The top of the wood pile should be at the center of the fire chamber. Lay heavier pieces of firewood to the bottom and lighter pieces to the top. Smallest pieces should be at the top.

A primer or a birch bark can be used to ignite the first batch. Put the primer over the wood pile and ignite the primer with a lighter. If the ignition plate is opened, close it after 10-15 minutes.

Adjust the air control switch on low front surface of the fireplace to reduce or to increase the power of flames.

- The more air is given to the chamber, the faster woods burn and waste heat is formed.
- The less air is given to the chamber, the more ash and bigger embers are left.
- Manufacturer recommends that the air control switch is opened 15 mm or more. This way more air can enter to the chamber and toxic gases will burn already in the burning chamber.

Adding firewood:

- Add the 2nd (and the 3rd) batch when the former batch has been burning approx. 50 minutes (3rd batch 20 minutes after adding the 2nd batch). Add 3 bigger pieces lengthwise and rest of woods (if needed) sideways. Try to add all woods as evenly as possible. Woods that point to same direction must be placed so that they leave at least 2 cm gaps to each other. This way new burning material ignites faster and combustion phase stays cleaner.
- Open the ignition damper to produce a better draft for a little while
- Open the glass door carefully and add 3.0 kg wood.
- Close the door as quickly as possible and then close the ignition damper also.

Heat storing:

- When embers are red-hot the air control switch should be pulled fully open, if not yet done.
- When red coals turn black, close the air control switch.
- Close the damper and let the heat come out slowly from the fireplace

NOTES

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. On the left side, there is a vertical margin line, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled document.

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DECLARATION OF PERFORMANCE

No. 581 DoP

1. Unique identification code of the product-type: **Ada Tunnel Top connection / Ada Tunnel High connection**

2. Type, batch or serial number or any other element allowing identification of the construction product:

Ada Tunnel Top connection / Ada Tunnel High connection

3. Intended use or uses of the construction product: **Capacitive fireplace**

4. Manufacturer: **Linnatuli Oy, Yrjönalhontie 13, FI-21420 Lieto**

E-mail: linnatuli@linnatuli.com

6. System or systems of assessment and verification of constancy of performance of the construction product:

AVCP 3

7. In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Notified factory **SGS Nederland BV** production control certification body **No. 0608** carried out testing of the product by the standard EN 15250 (**test report EZKA/2017-01/00026-1**).

9. Declared performance

Essential characteristics	Performance	Harmonized technical specification
Fire safety	Pass	EN 15250:2007
Minimum distance to combustible materials	Side wall: 50 mm Back wall: 1000 mm Ceiling: 100 mm Front: 1000 mm	
Mean concentration of CO	0.07 vol%	
Release of dangerous substances	Pass	
Flue gas temperature	172 °C	
Total efficiency	81.4 %	
Total heat output	160 MJ (44 kWh)	
Heat storage capacity	100 %: 5.4 h 50 %: 12 h 25 %: 20 h	
Surface temperature	Pass	
Test fuel	Wood logs	
Maximum amount of fuel	12 kg (6 kg + 3 kg + 3 kg)	

Capacitive fireplaces flue at least T600. Maximum flue gas temperature in temperature safety test 254 °C.

10. Signed for and on behalf of the manufacturer by:

Lieto 10/08/2017



Ville Seppälä

Product Development Manager



17
NB 0608

Linnatuli Oy, Yrjönhontie 13, FI-21420, Lieto

DoP: 581 DoP

EN 15250:2007

Slow heat release appliance fired by solid fuel

**ADA Tunnel Top connection /
ADA Tunnel High connection**

Minimum distance to	Side wall: 5 cm
Combustible materials:	Back wall: 100 cm

Recommended fuels:	Wood logs
---------------------------	-----------

Emission of combustion products (related to 13 % O ₂)	0.07 vol%
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Energy efficiency	81.4%
-------------------	-------

Thermal output	160 MJ (44 kWh)
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More information at:
www.linnatuli.com