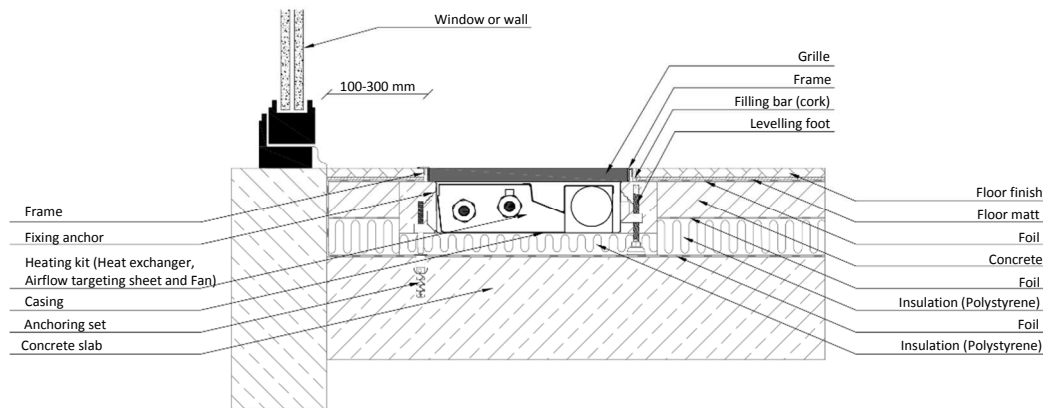


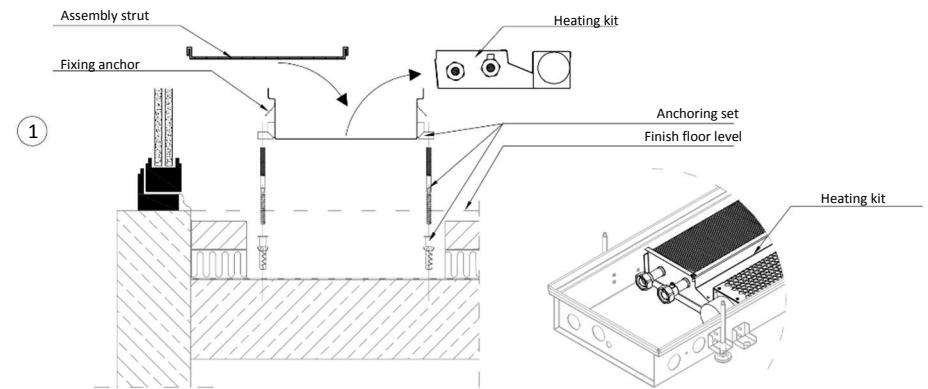


Packing list:

** Additional accessories



The example of VKN fan assisted heater assembly



8. Prepare a trench for the heater

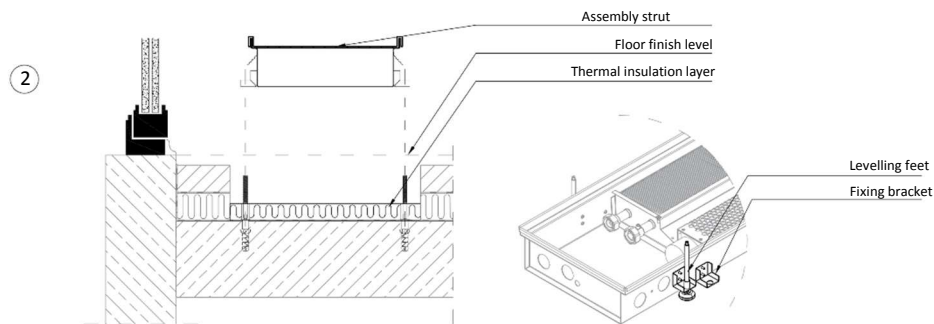
Before starting the assembly works take out and secure the heating kit (fan, airflow targeting sheet and heat exchanger). After that, install assembly struts on the casing.

Prepare a trench 100 mm wider and longer than heater casing. The depth of the trench should be planned in the way that the top of the grille is on the same level as floor finish level (take into account insulation in the bottom of the trench).

Put the heater casing in the centre of the trench. Point the places for fixing anchors holes on the concrete. Put out the heater casing of the trench.

NOTE!

Fans contaminated by dirt and dust while building or renovation works might cause damage of fans or higher sound power level of fans (louder fan work). Damage caused by fan contaminations are not covered by the warranty.



9. Heater fixing and thermal insulation

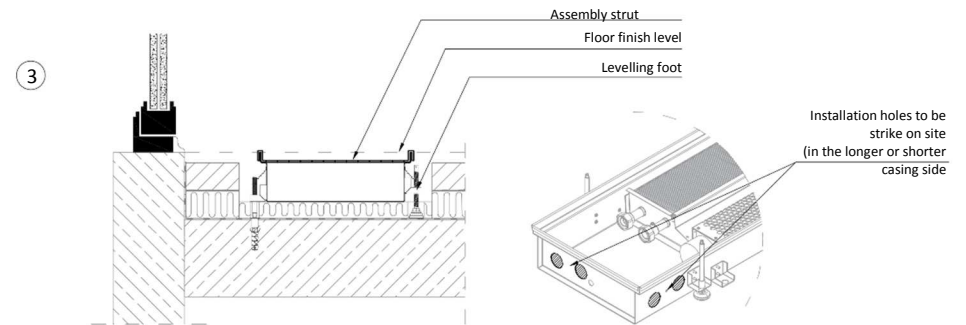
Prepare an appropriate holes for anchoring screws in concrete slab. Drill the holes on marked points and hammer the rawplugs into them.

Place the thermal insulation on the bottom of the trench (on the concrete slab). Remember to do the holes for fixing anchors and levelling feet in insulation. The recommended thermal insulation is Polystyrene.

The thermal insulation layer under the casing should be done of materials of relative deformation factor not less than 70 kPa while compressive strength is at 10%.

The minimum insulation thickness should be not less than:

- 20 mm for heaters installed in an upper levels (above the floor with central heating system),
- 140 mm for heaters installed on the ground floor (Polystyrene declared properties $\lambda = 0,004 \text{ W/m}^2\text{K}$, $U_{min} = 0,30 \text{ W/m}^2\text{K}$).



10. Install the heater casing in the trench

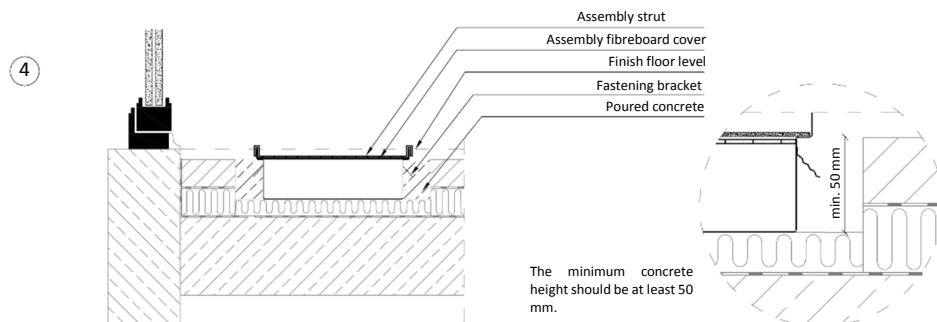
Strike the holes for connection pipes and for electric wires. You should strike 3 holes in one side of the casing (longer or shorter side).

Put the casing with levelling feet in the trench. Levelling feet should be placed on the concrete slab. Do not install levelling feet on thermal insulation. Use the screwdriver to level the levelling feet.

Screw the heater casing using fixing anchors kits. Screw the M8 nut on the fixing anchor until resistance is felt.

Fill the rest of the free areas between the heater casing and thermal insulation with low expandable foam.

Leaving free space between the casing and thermal insulation can lead to increased volume of device.

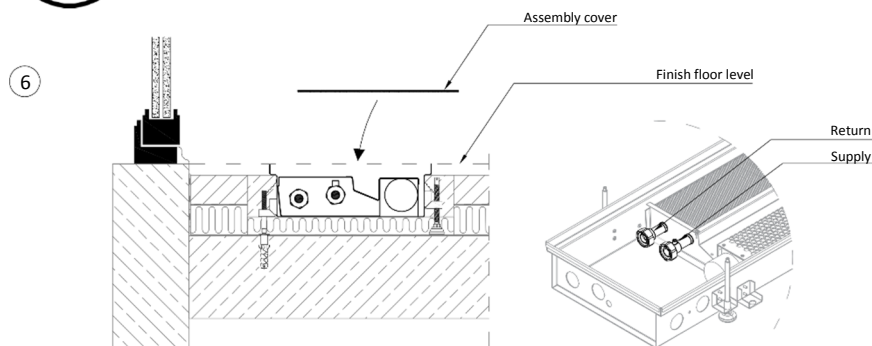


11. Do the hydronic and electric connections, pour the concrete around the casing

Install all pipes and electric wires. Secure the connections and all the holes in the casing by using low expandable thermal foam insulation. Make sure that the casing is properly settled in the trench and all connections are done. Make sure that assembly struts are installed on the top edge. Put assembly fibreboard cover on the casing to avoid contamination inside the casing. Pour the concrete around the casing. The minimum height of concrete should be at least 50 mm.



Tray of fan assisted trench heaters VKN are standardly equipped with a connection for connecting the grounding installation. To be used depending on local or special guidelines (the requirement to use PELV circuits for example). According to the current regulations, low voltage devices (fan assisted trench heaters VKN) should not be connected to the grounding of other installations.

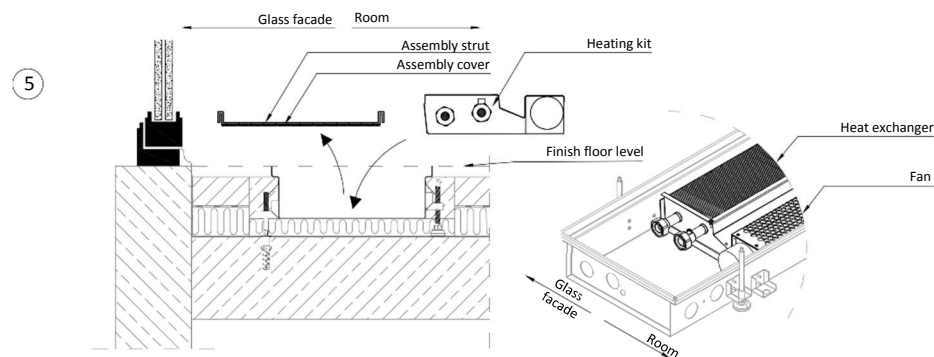


13. Do the hydronic and electric connections to the heating kit

Install valves and thermal actuators (if required) on the pipes of heat exchanger. Connect the pipes to the valves. Supply pipe is to be connected to the heat exchanger pipe with air vent (on the room side). Connect electric wires to the fan. Use the electric scheme to do the wiring for the thermal actuator and the controls.

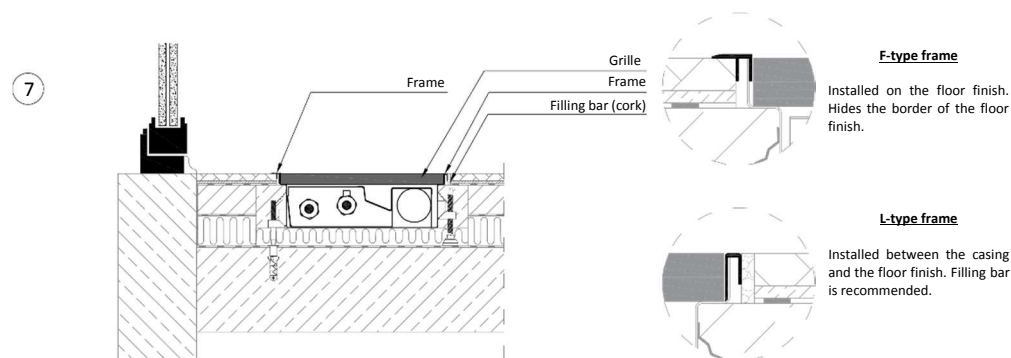
Carry in the tightness test for hydronic connections.

After completing installation works, cover the heater with the assembly fibreboard cover to avoid contamination of fan and heat exchanger with dust of the rest of building works. Damage caused by the heating kit contamination is not a subject to complain.



12. Install the heating kit

When the concrete gets dry, remove the assembly fibreboard cover and struts. After that, clean the inside of the casing and install the heating kit. In fan assisted trench heater type VKN the heat exchanger should be on the glass façade / wall side.



14. Install the grille and frame

After finishing the rest of building works remove the assembly fibreboard cover. Then install the grille and frame on the casing edge.

Note!

Grilles, frames, thermostatic and lockshied valves, thermal actuators, rail power supplies and protective fibreboard are additional equipment accessories.

Electric connection



Fan electric connection:

- Red – positive (+) 24 V DC
- Black – negative (-) 24 V DC
- White – control voltage 0-10 V DC

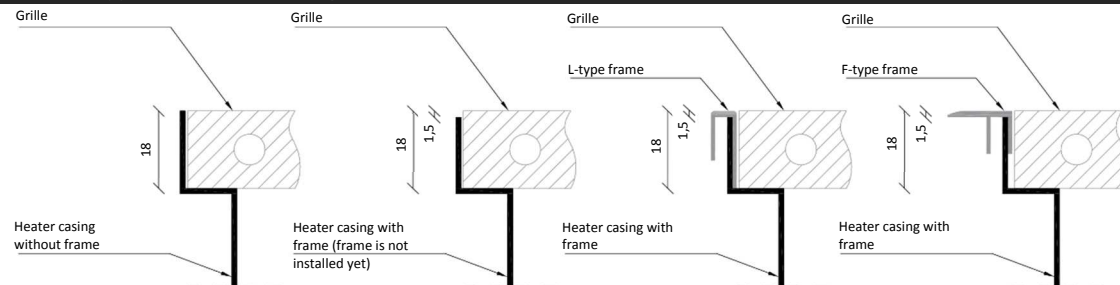
Recommended wire type: LIYCY

Allowed wire type : LIYY

Electrical wires routing should be done in accordance with the applicable standards of the electrical industry.

The cable cross-section should be determined in accordance with electrical installation project based on the voltage drop calculations for the planned wires routing.

Frame type and heater height



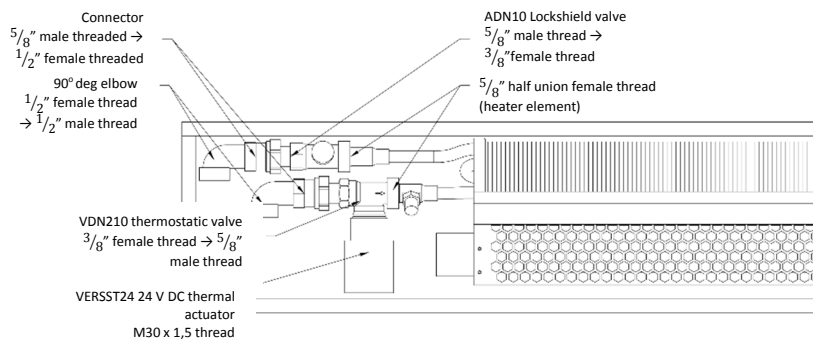
The height of the casing edge depends of the frame type. It is recommended to order heater with frame at the same type (if heater is going to be finished with frame).

Casing edge for grille without frame is 18 mm high – the same as the grille. Casing edge for grille with frame is 16,5 mm high. Thanks to that, after installing the frame, grille and frame are on the same level.

Frame is usually off the casing for transporting. Frame should be installed on the casing after completing all installation and building works, according to the point ⑦ of this manual.

Hydronic connection

Example of hydronic connection of fan assisted VKN1 trench heater

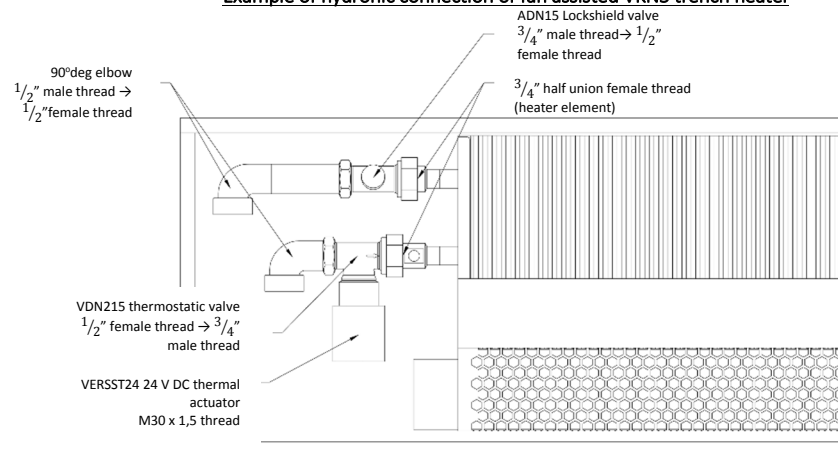


For VKN1 heater thermostatic and lockieshield valves should be DN 10 diameter. E.g. Siemens VDN210 as a thermostatic valve and Siemens ADN10 as a lockieshield valve. Connector 5/8" male threaded -> 1/2" female threaded is as standard heater equipment.

VERANO WEBSITE –
Fan assisted trench heater type VKN1



Example of hydronic connection of fan assisted VKN5 trench heater



VERANO WEBSITE –
Fan assisted trench heater type VKN5



If you have any questions or doubts concerning installation works, please contact us:

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