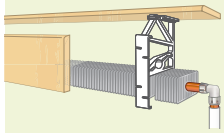
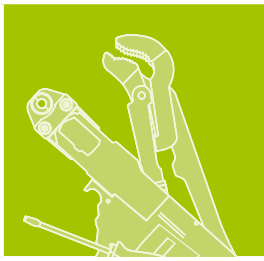
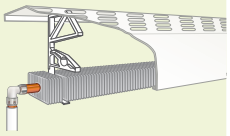
SH INSTALLATION

SKIRTING HEATING. INDIVIDUAL.

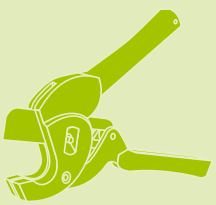
Classic.







Delta.



PDF

VMONT2_EN | 11/2025

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VARIOTHERM

1.1 Guarantee conditions ⚠

If installed or commissioned incorrectly, all claims on the basis of the manufacturer's warranty and guarantee become void.

This brochure (version dated 11/2025) is intended for authorised qualified personnel and constitutes part of our warranty!

All previous versions become invalid upon release of a new version! For the latest version please refer to the QR Code on the title page or www.variotherm.com.

Local, geographic and climatic regulations/standards for cooling, heating and electrical installations must be observed!

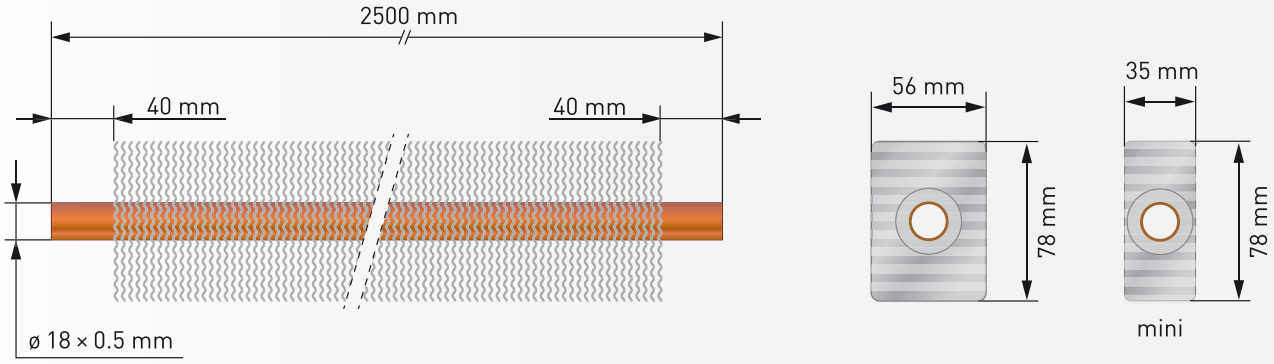
1.2 Information on standards ⚠

The validity of the standards referred to in these installation instructions was last checked on 18.11.2025. If necessary, amendments to standards must be checked.

1.3 Storage of the heating elements ⚠

The heating elements are delivered packaged in boxes with a length of 2.5 m. They should be protected against damage or unintended bending of the louvres, and should only be removed from the packaging shortly before installation.

The heating elements consist of a copper pipe ø18 x 0.5 mm (DIN EN 12449) with aluminium louvres 56 x 78 mm or 35 x 78 mm (mini).



1.4 Storage of the cladding ⚠

The claddings are delivered packaged in boxes with a length of 1.5 m. They should be protected against damage and only be removed from the packaging shortly before installation.

1.5 Storage of pre-insulated Variomodular pipe 16x2 ⚠

The pre-insulated Variomodular pipe is an aluminium multi-layer composite pipe (100 % oxygen diffusion-tight) which includes insulation.

Damage (e.g. denting and scratching) is to be avoided during storage, transport, unloading, unwinding and laying. This type of damage has a detrimental effect on the creep behaviour.

In order to prevent damage to the Variomodular pipe during the construction phase, high-visibility warning signs should be placed at appropriate locations.

The interaction of the air's oxygen with UV rays damages the pipes, which should not be stored in the open air. Normal temporary storage on the construction site for a few days is permissible.

At low temperatures (≤ 5 °C) the Variomodular pipe should be stored in heated rooms prior to processing.

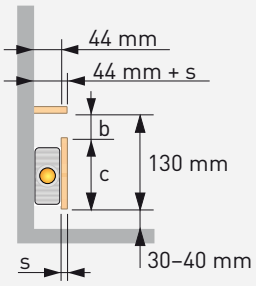
1.6 Maximum operating pressure ⚠

The permissible operating pressure is a maximum of 6 bar.

2.1 Overview of skirting heating types

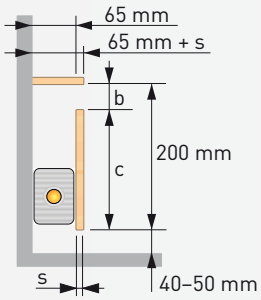
Classic skirting heating for wooden cladding (provided by the customer)

Type mini



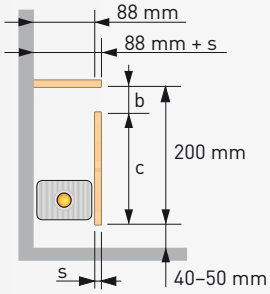
b ... 25 mm
c ... 105 mm
s ... min. 15 mm
(e.g. wooden multilayer board)

Type Ia (1a)



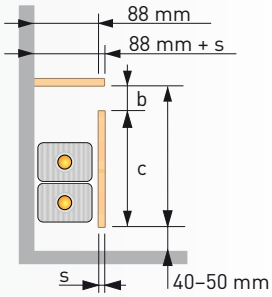
b ... 37 mm
c ... 163 mm
s ... min. 15 mm
(e.g. wooden multilayer board)

Type IIa (2a)



b ... 37 mm
c ... 163 mm
s ... min. 15 mm
(e.g. wooden multilayer board)

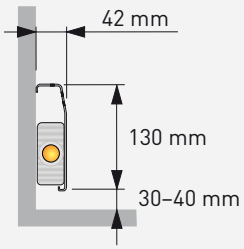
Type IIIa (3a)



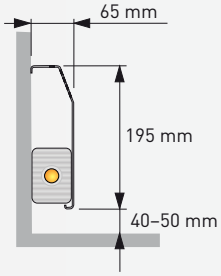
b ... 37 mm
c ... 163 mm
s ... min. 15 mm
(e.g. wooden multilayer board)

Delta skirting heating with metal cladding

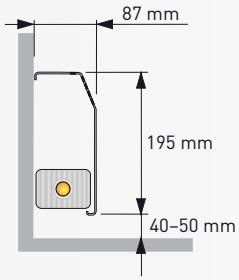
Type mini



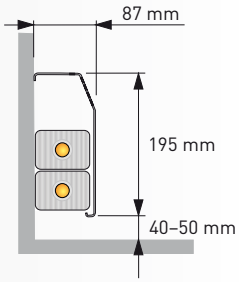
Type Ia (1a)



Type IIa (2a)

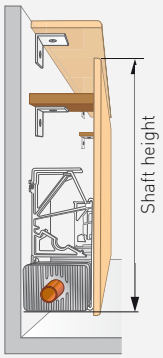


Type IIIa (3a)

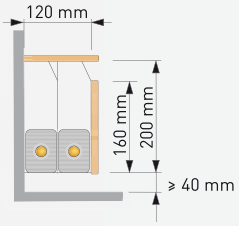


Special types of Classic skirting heating for wooden cladding (provided by the customer)

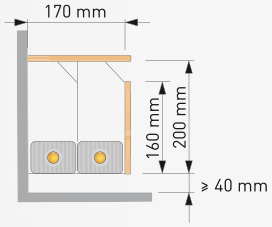
Change in shaft height



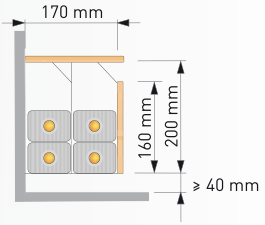
Type IVa (4a) with wooden brackets



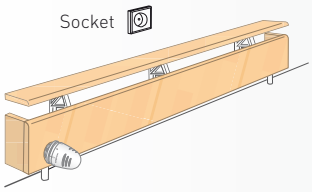
Type Va (5a) with wooden brackets



Type VIa (6a) with wooden brackets



2.2 General



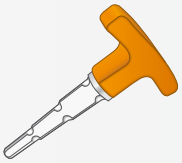
Skirting heating systems are installed in the manifold system with pre-insulated Variomodular pipes or in the two-pipe system with copper pipes, for example.

When planning electric sockets, ensure that they are located above the skirting heating.

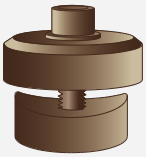
2.3 Tools

Variotherm tools

Pipe cutting pliers



Calibration and chamfering tool



Round hole punch (if required)

Additional tools that are required/recommended for installation work:

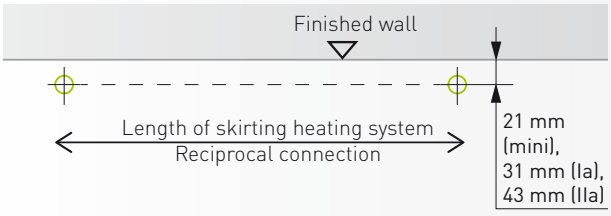
Pipe cutter for copper pipes

Open-end wrench (size 21)

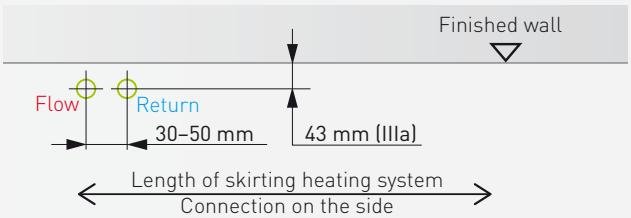
Drill / battery-powered screwdriver

2.4 Positioning of the supply pipe

Classic & Delta skirting heating: mini, Ia (1a), IIa (2a)



Classic & Delta skirting heating: IIIa (3a)



2.5 Maximum skirting heating length per heating circuit

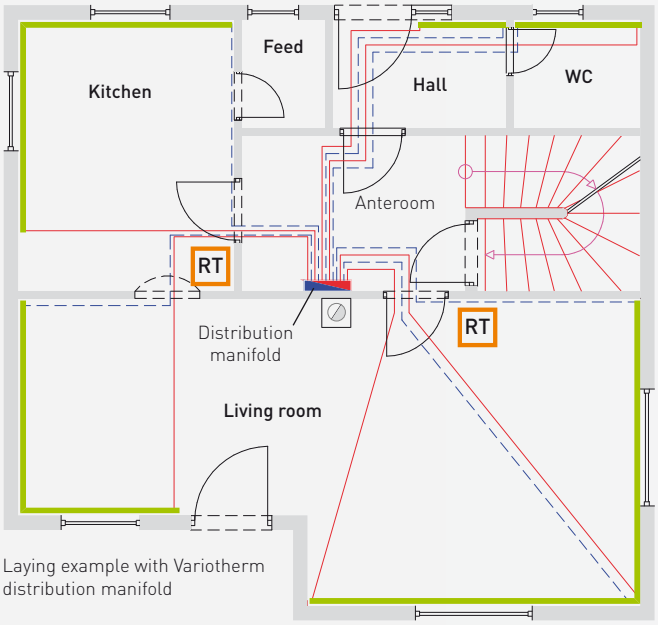
Skirting heating mini, Ia (1a) and IIa (2a): max. 7.5 m per heating circuit (= 7.5 m heating elements)

Skirting heating IIIa (3a): max. 5.0 m per heating circuit (= 10 m heating elements)

2.6 Laying of the supply pipe with Variotherm manifold

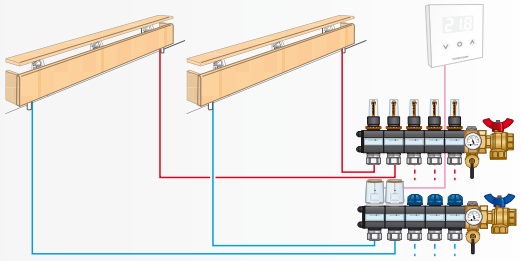
For installations with manifold systems, first lay the pre-insulated Variomodular pipes 16x2 from the manifold to the skirting heating and back, and then connect them to the manifold via a screw fitting. There must not be any kinks in Variomodular pipes when laying them. The Variomodular pipe should be routed "endlessly" (= without additional connection points) from the manifold to the skirting heating. The pipe is positioned near the skirting heating with the skirting heating connection set.

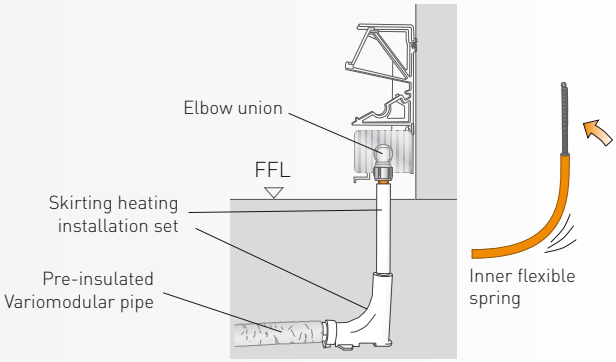
Electronic room thermostats and actuators are used to control the room temperature.

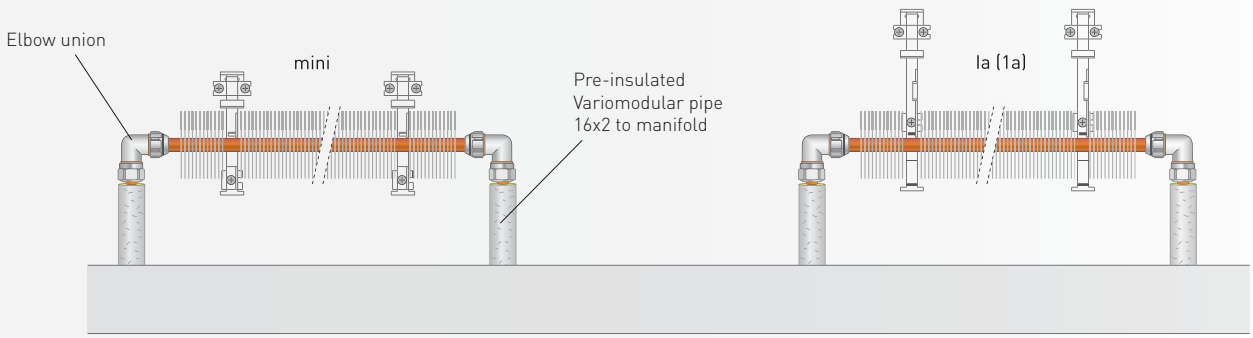


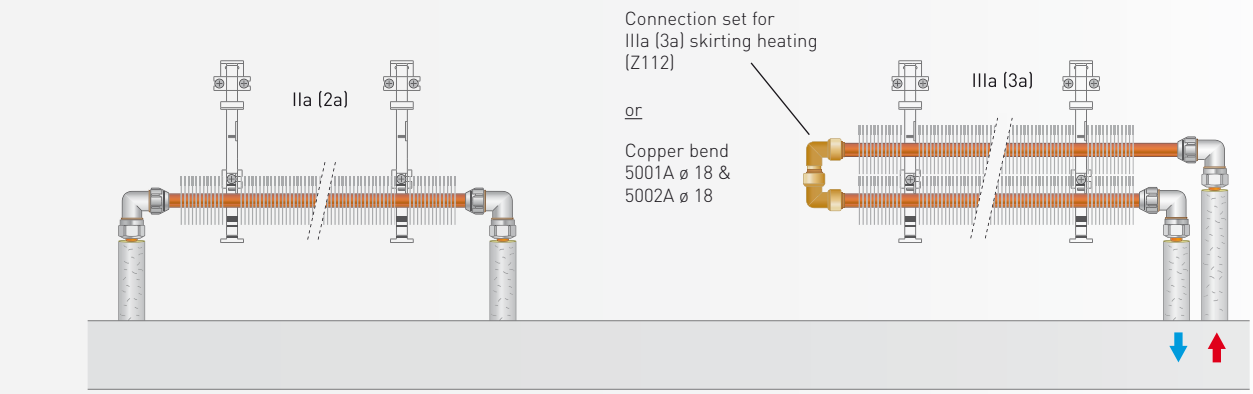
Laying example with Variotherm distribution manifold

e. g. TOUCH HC(D)



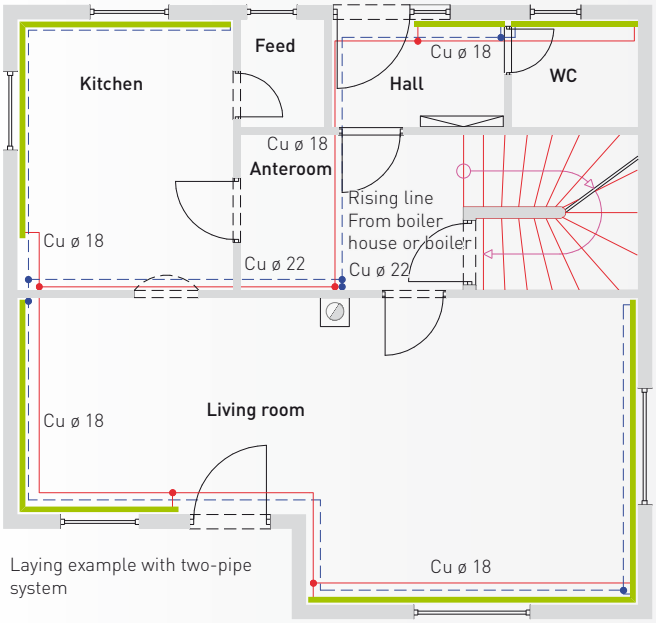




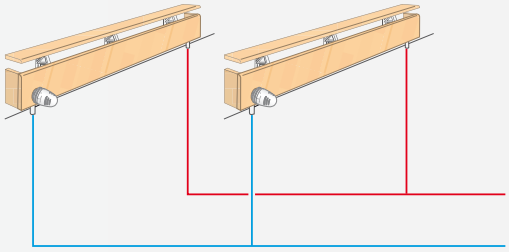


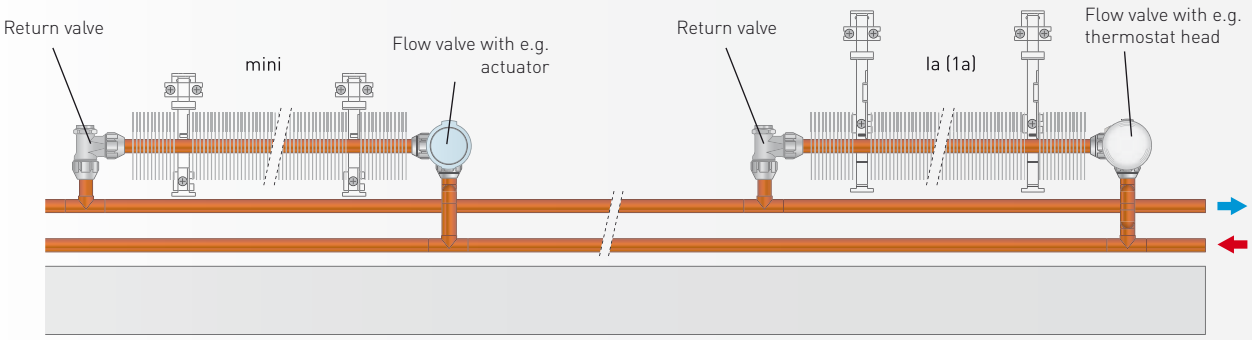
2.7 Laying of the supply pipe with two-pipe system

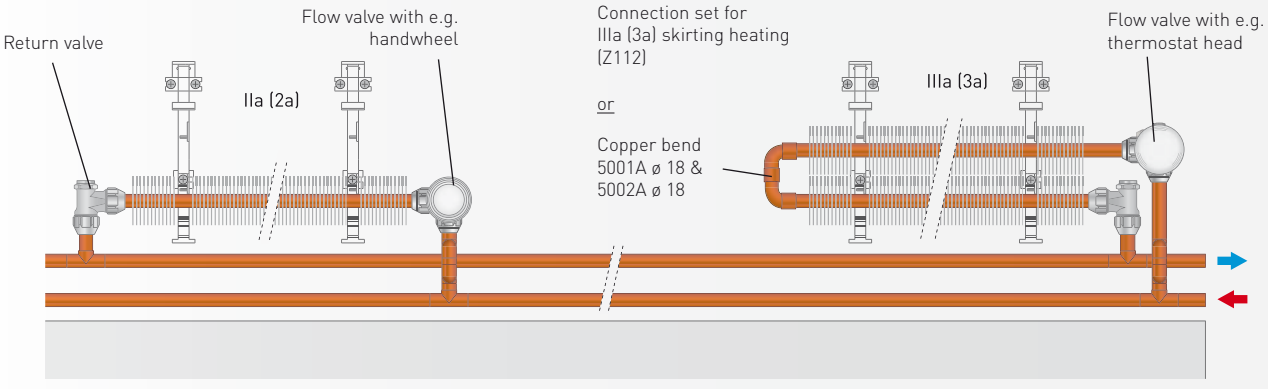
For installation in a two-pipe system, flow valves with integrated air vents are used to control room temperature. The return valves are used to shut off and set the water quantity (hydronic balancing). For the flow valves, a valve insert for automatic hydronic balancing is provided (see Chapter 4.2.5).



Laying example with two-pipe system



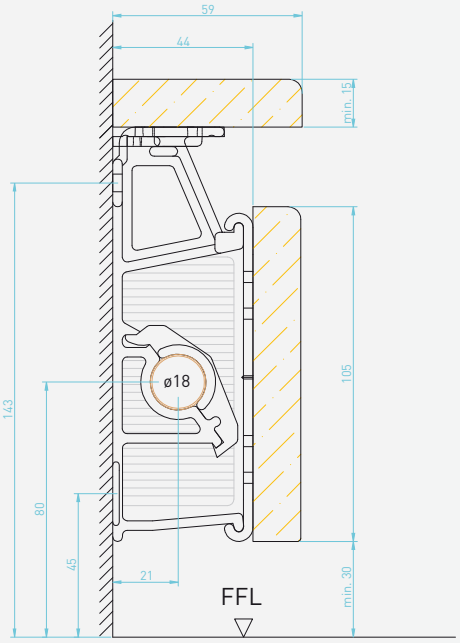




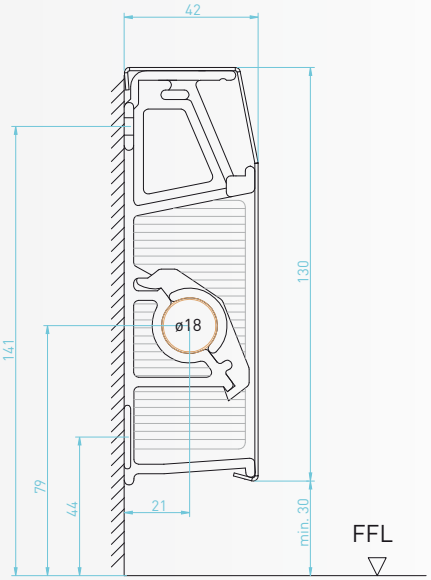
2.8 Detail drawings

All dimensions in mm
(not to scale)

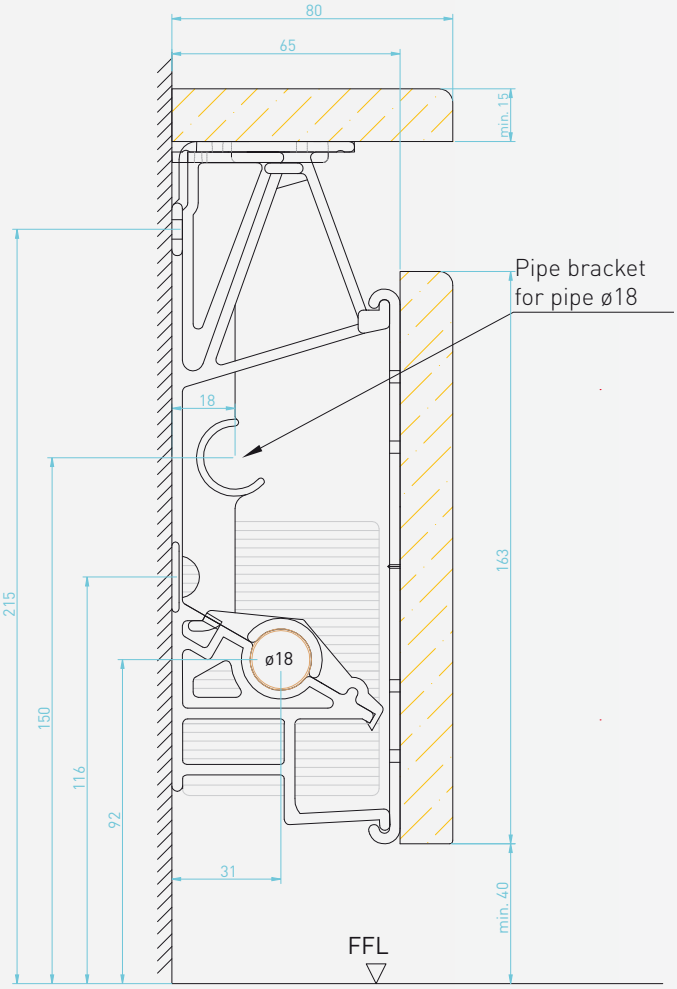
mini Classic



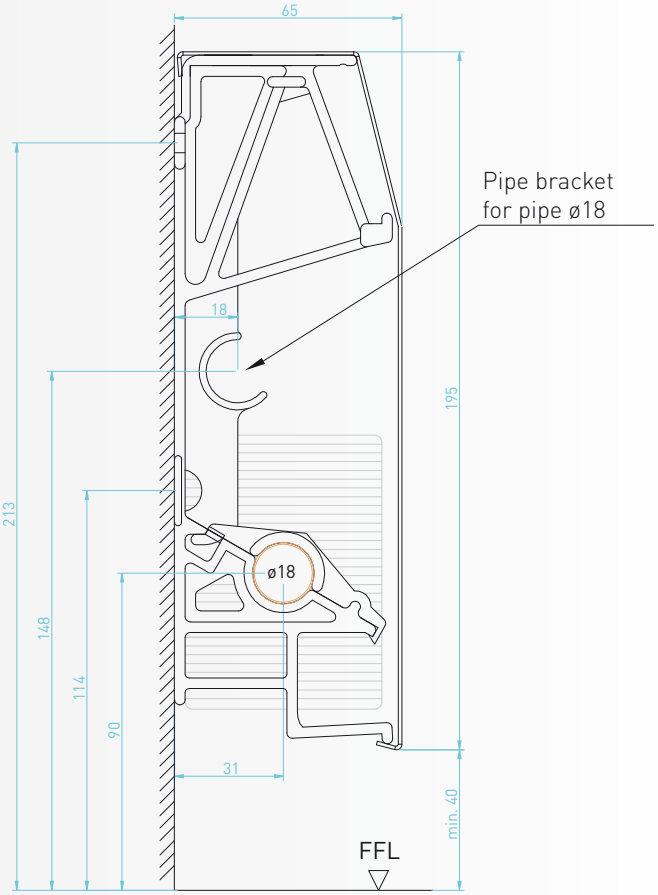
mini Delta

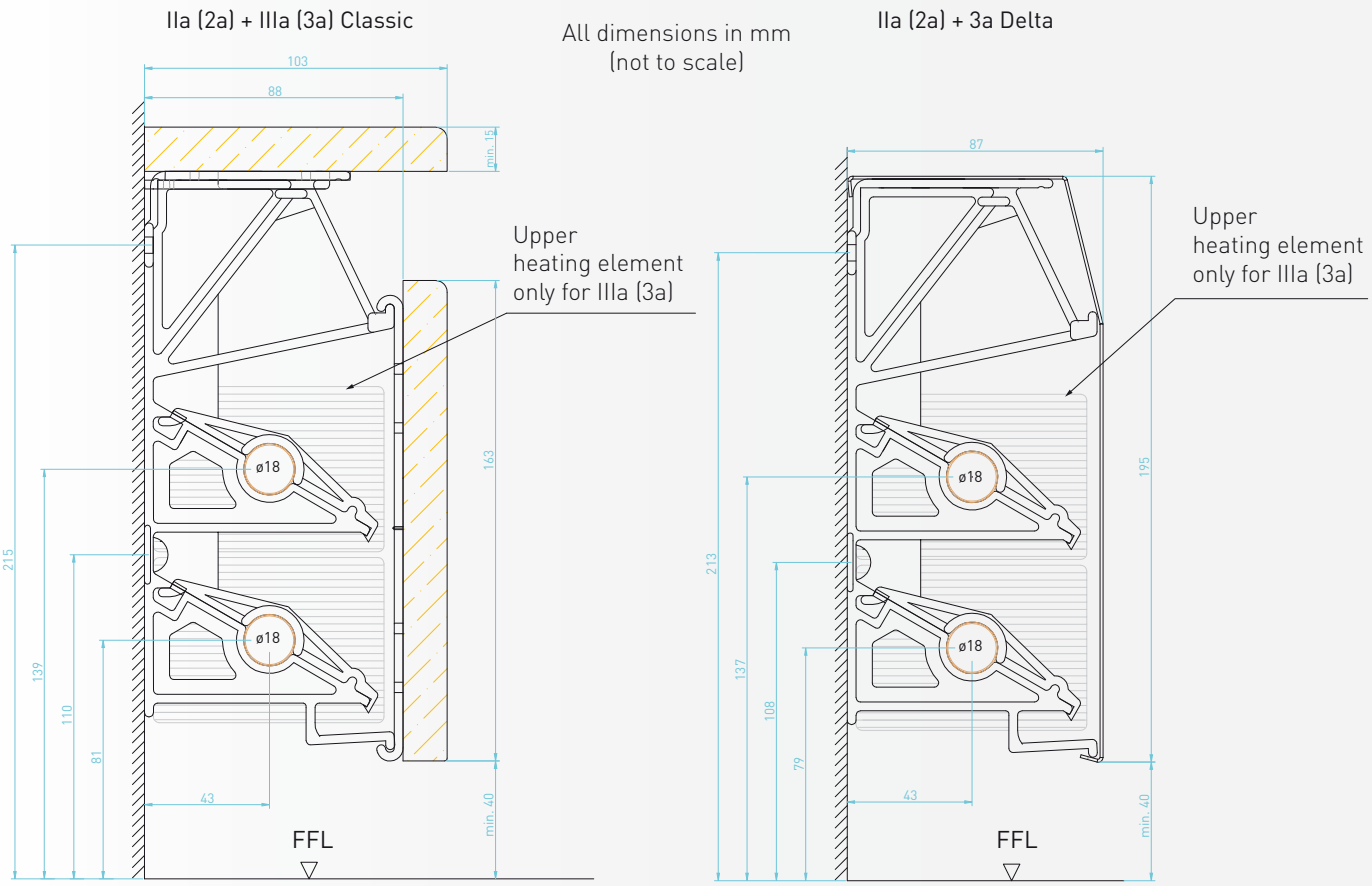


Ia (1a) Classic



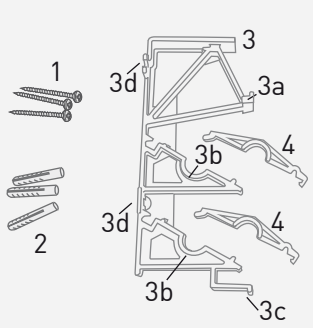
Ia (1a) Delta

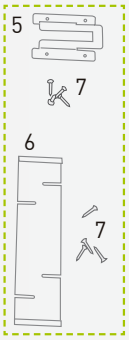



IIa (2a) + IIIa (3a) Classic
All dimensions in mm
(not to scale)
IIa (2a) + 3a Delta
103
88
min. 15
Upper
heating element
only for IIIa (3a)
ø18
ø18
215
139
110
81
43
163
min. 40
FFL
87
Upper
heating element
only for IIIa (3a)
ø18
ø18
213
137
108
79
43
195
min. 40
FFL

3.1 Bracket components

The brackets for the Classic and Delta skirting heating systems are identical. For the Classic skirting heating system, a mounting plate and a mounting base are supplied for each bracket, to allow the cladding provided by the customer to be attached to the bracket. (Parts in green frame for Classic only).

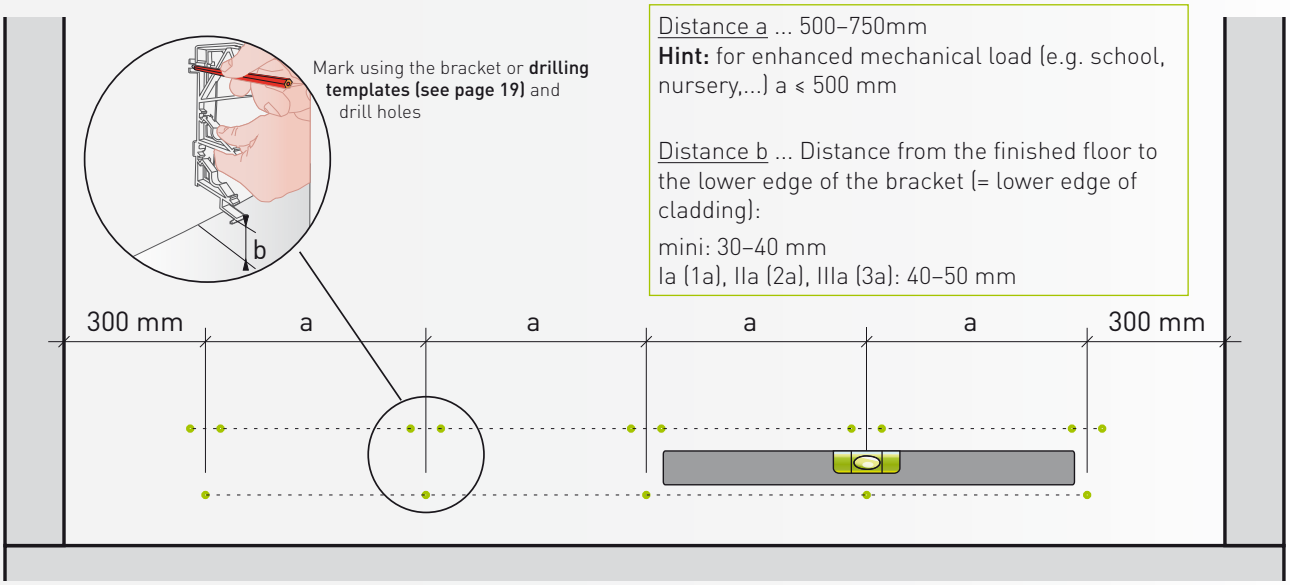




1 ... Rounded head screws 5x45 mm (3x)
2 ... Dowels U8 (3x)
3 ... Bracket (1x)
- 3a ... Catch
- 3b ... Bearing (heating element)
- 3c ... Spring
- 3d ... Screw slot

4 ... Clip (mini, Ia (1a): 1x; IIa (2a) + IIIa (3a): 2x
5 ... Upper mounting base (1x)
6 ... Front mounting base (1x)
7 ... Countersunk head screws 3x16 mm (8x)

3.2 Marking the bracket position



Distance a ... 500–750mm
Hint: for enhanced mechanical load (e.g. school, nursery,...) a ⩽ 500 mm

Distance b ... Distance from the finished floor to the lower edge of the bracket (= lower edge of cladding):

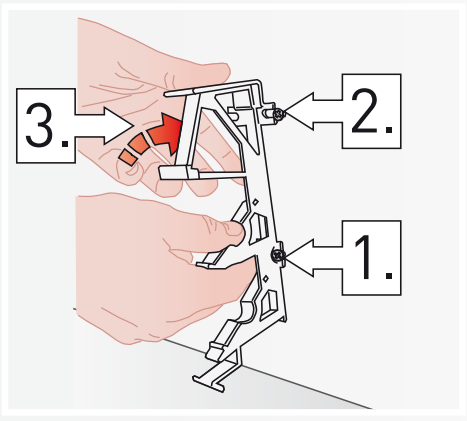
mini: 30–40 mm
Ia (1a), IIa (2a), IIIa (3a): 40–50 mm

3.3 Fastening the brackets

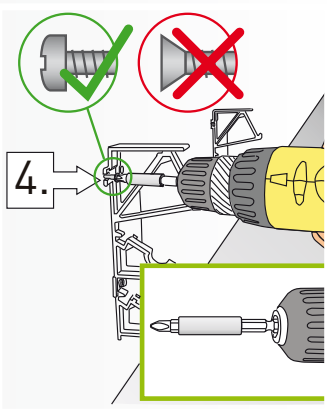
Use spacers to smooth uneven parts of the wall. The upper and front edge of the bracket should be aligned (test with bar).

Screw the lower and one of the two upper screws into the positions marked previously, but not fully (allow space of approx. 5 mm). Fit the missing screw, align the bracket and fasten (tighten all screws).

Attention: Use only the delivered rounded head screws! Don't use countersunk screws!

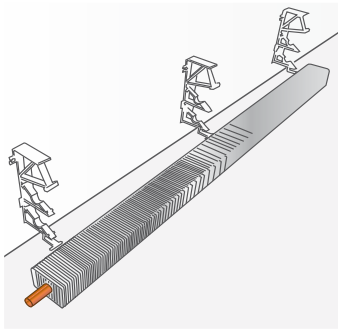


Fit the bracket to the screws

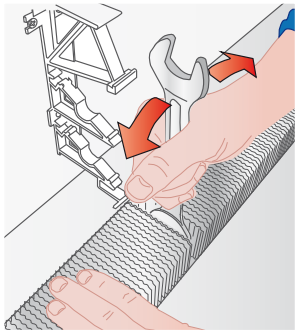


Align the brackets and tighten all screws

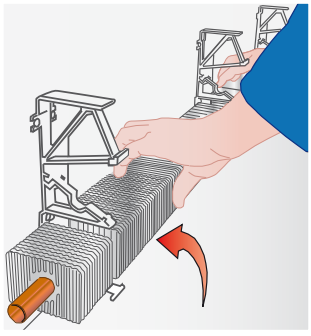
3.4 Inserting the heating elements



Lay the heating elements parallel to the wall...

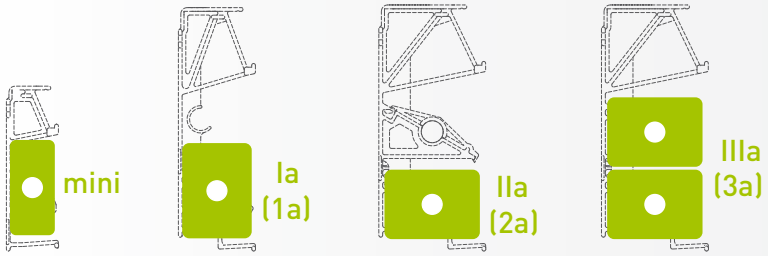


... and push the aluminium plates on the brackets to one side with an open-end wrench (size 21), for example.



Insert the heating element

The heating elements are cut to length according to the diagram using pipe cutters. Segments are either soldered to one another or press-fit (see table below for suitable press fittings).

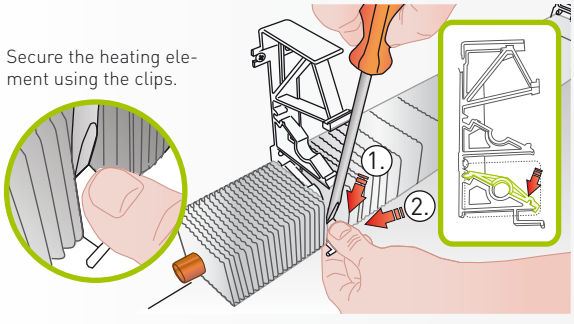


<< Keep in mind the correct installation position of the heating elements!

Table of suitable press fittings:

Pipe material	Support sleeve	Viega		Sanha	
		Press fitting	Press-fitting jaws	Press fitting	Press-fitting jaws
Copper	Yes	Profipress Sanpress	V18	Pressfitting series 6000/8000	SA18

3.5 Securing the heating elements



Secure the heating element using the clips.

<< The clip of the respective type is pushed down at the points marked with an arrow, and then latched into position using the thumb.

The clip can be removed easily using a multigrip pliers. >>

<< Clips for securing the skirting heating.

4.1 Hydraulic connection on manifold system

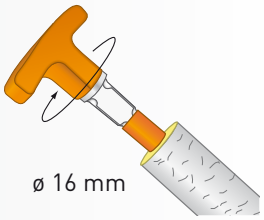
4.1.1 Cutting to length, calibrating and bevelling the pre-insulated Variomodular pipe

The Variotherm pipe cutting pliers is used to cut the pipe to length.

Caution: The pipe must be cut at a right angle.

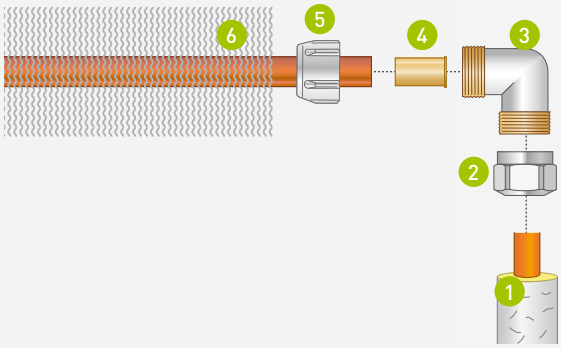
Rotate the calibration tool into the pipe to the stop angle to calibrate and bevel the end of the pipe. Visually check that the face of the pipe is smooth, clean and free of chips.

Pipe cutting pliers



Calibration and bevelling tool

4.1.2 Feed to flow and return



1. Pre-insulated Variomodular pipe 16x2
2. 3/4"EURO x16 clamping screw fitting
3. 90° angle piece 3/4"EURO
4. 18 × 17 mm support sleeve
5. 3/4"EURO x Cu18 clamping screw fitting
6. Heating element (with copper pipe)

Connecting the supply pipe:

Push the clamping screw fitting 2 over the pre-insulated Variomodular pipe. 1 Then screw the clamping screw fitting with the angle piece 3 and tighten with 35 Nm.

Connecting the skirting heating:

Push the assembled clamping screw fitting 5 loosely over the copper pipe. Insert the support sleeve 4 into the copper pipe of the heating element. **Important:** Push the copper pipe into the angle piece until it stops 3 and tighten the screw fitting in this position with 40 Nm.

4.1.3 Venting

Air removal is performed by flushing and by the air vents installed on the distribution manifold

4.1.4 Control and pressure test

Once all circuits have been connected to the heating manifold, the system can be filled downstream of the manifold and pressurised. The pre-insulated Variomodular pipes are to be kept under water pressure prior to applying the screed so that any damage becomes immediately visible.

For details regarding the system and heating circuit pipes and the room temperature control please refer to the "DISTRIBUTION and CONTROL" planning and installation instructions. >>

PDF

4.2 Hydraulic connection on two-pipe system

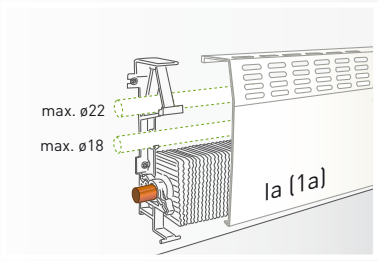
In the two-pipe system, the skirting heating is piped in accordance with the laying diagram using copper pipes, for example.
The flow valve with integrated air vent is installed on the supply side, and the return valve is installed on the return side.

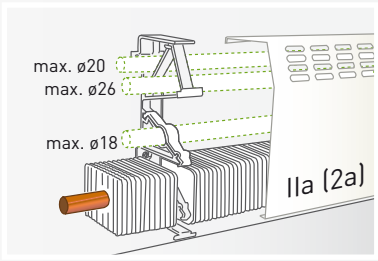
4.2.1 Soldering the copper piping

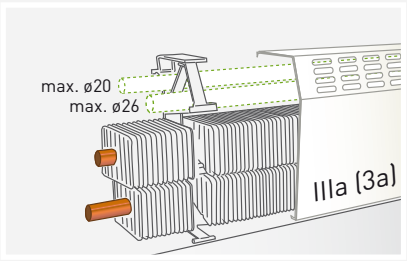
Before soldering, prepare a cover to protect the floor and wall from flames. Clean the pipes and fittings at the solder contact points with a cleaning cloth and inner brush. Apply solder paste evenly to both parts. Join the two contact points and solder them. It is important that the soldering point is kept clear of dirt particles such as masonry dust etc.

4.2.2 Tip for piping

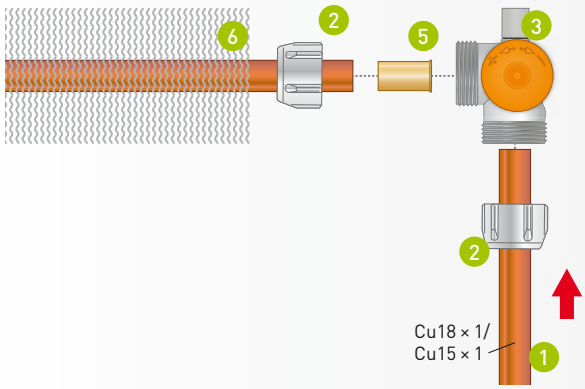
If necessary (old building with finished floors etc.), additional uninsulated pipes can also be held in the brackets.

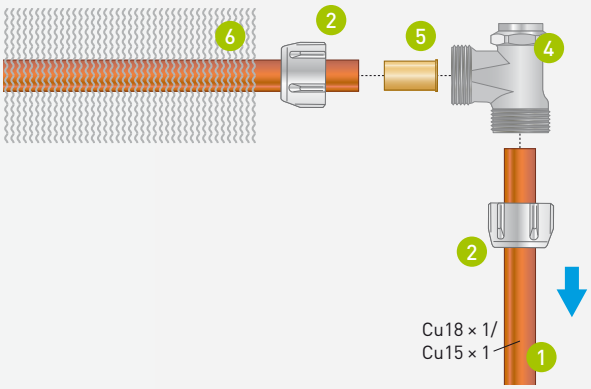






4.2.3 Feed to flow and return



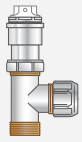


1 E.g. copper pipe ø 18x1 mm 2 3/4"EURO×Cu18 clamping screw fitting 3 Flow valve 4 Return flow valve
5 18 x 17 mm support sleeve (only necessary with heating element with copper pipe!) 6 Heating element (with copper pipe)

Push the assembled clamping screw fitting 2 loosely over the copper pipe. Insert the support sleeve 5 into the copper pipe of the heating element. **Important:** Cut the pipe straight/at right-angles, and push into the flow valve 3 or return flow valve 4 until the stop is reached. In this position, tighten the clamping screw fittings with 40 Nm.

4.2.4 Venting

The individual skirting heating systems are vented via the flow valves with integrated manual air vents.
For valves without integrated air vents, the venting elbow is installed in the return line. >>

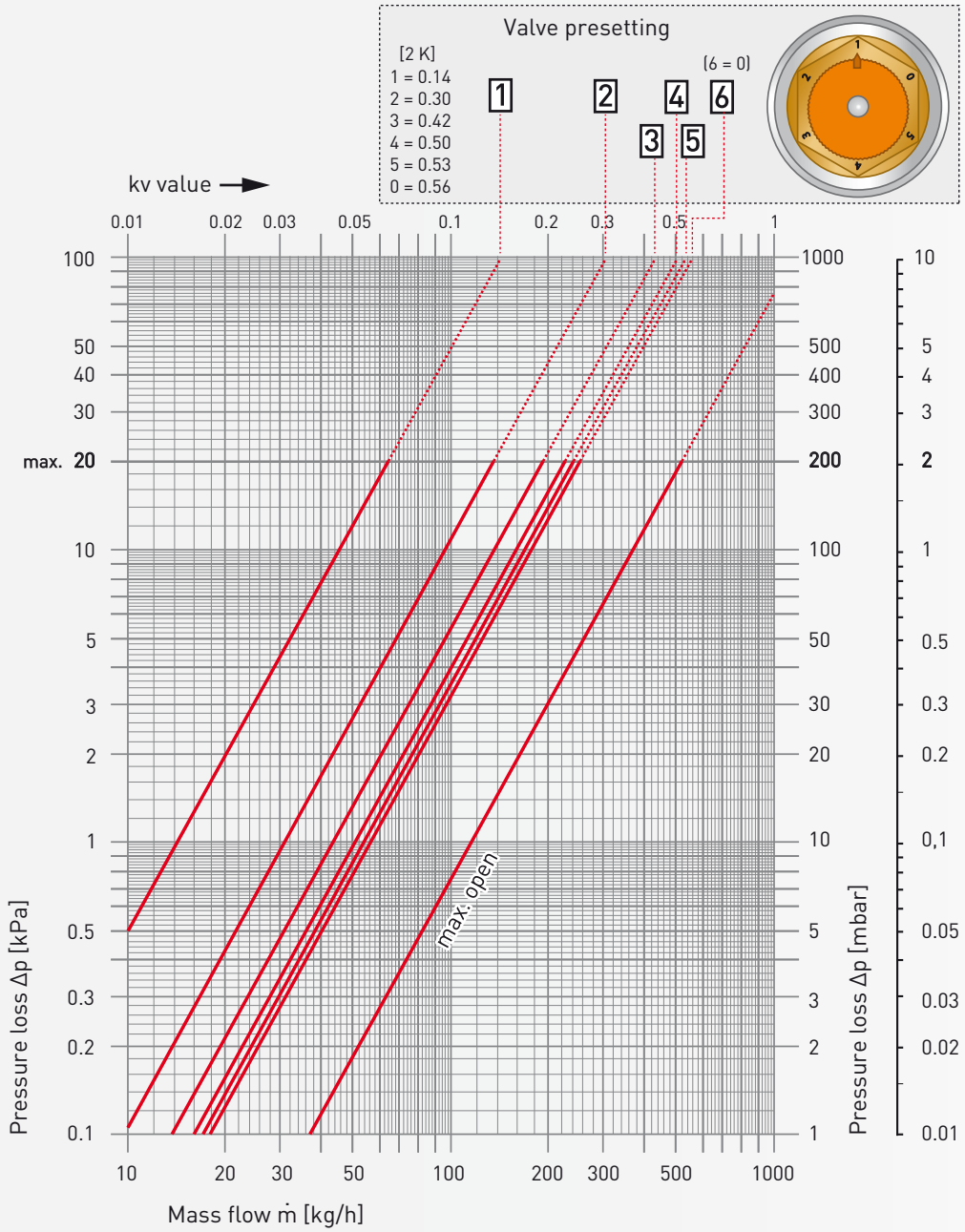


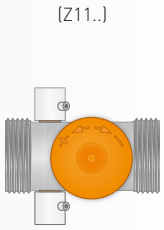
4.2.5 Flow valve

The flow valve with integrated air vent is available in left, right or straight-through versions. On delivery, a protective plastic cap is fitted on the valve. This cap must be removed before installing a thermostatic head.

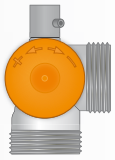
Shut-off or Opening: Open or close the valve using the protective plastic cap.

Presetting: Remove the protective plastic cap. Carry out hydronic balancing using the orange rotary knob according to the setting diagram. Balancing via the return valve is then no longer required.

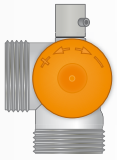




Straight-flow



left-handed

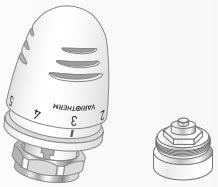


right-handed

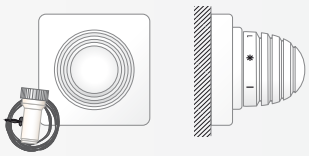
	kv value							
System deviation	**0.5 K**	**1 K**	**1.5 K**	**2 K**	**2.5 K**	**3 K**	**3.5 K**	**4 K**
Presetting 1	0.05	0.11	0.14	0.14	0.14	0.14	0.14	0.14
Presetting 2	0.13	0.25	0.29	0.30	0.30	0.30	0.30	0.30
Presetting 3	0.14	0.26	0.38	0.42	0.44	0.44	0.45	0.45
Presetting 4	0.14	0.27	0.39	0.50	0.54	0.55	0.56	0.57
Presetting 5	0.15	0.28	0.40	0.53	0.66	0.70	0.72	0.73
Presetting 6 (= 0)	0.15	0.28	0.41	0.56	0.70	0.76	0.80	0.81

Valve heads for flow valves:

*	6 °C
1	12 °C
2	16 °C
3	20 °C
4	24 °C
5	28 °C
max.	30 °C



Thermostat head (optionally with extension for a cladding thickness of 10 mm or more for IIa (2a) (2a) + IIIa (3a) Classic



Thermostat head with remote sensor

Handwheel

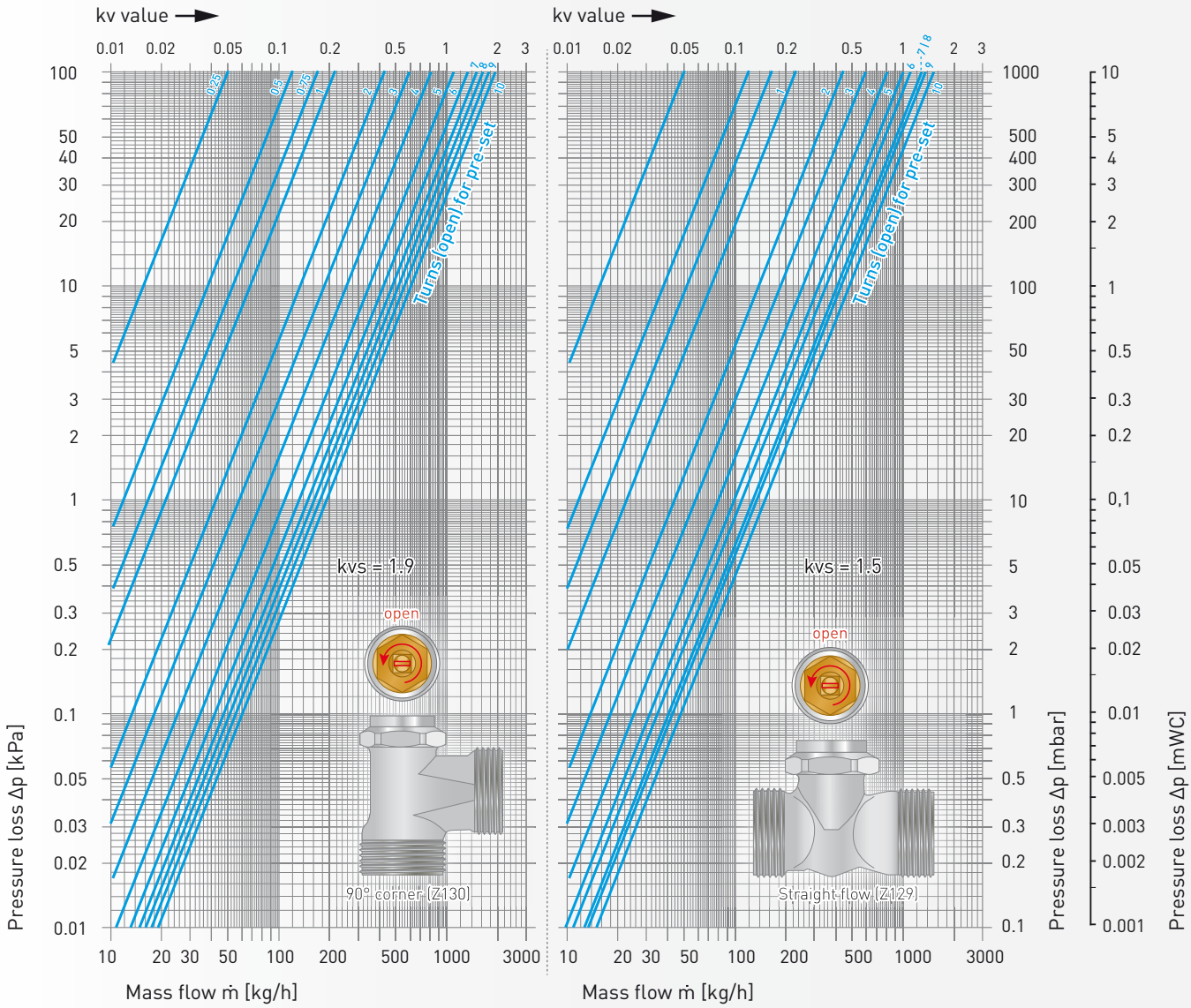
Thermoelectric actuator

4.2.6 Return valve

The return valve is used for hydronic balancing and as a shut-off valve if the heating elements have to be dismantled (e.g., for painting). The valve spindle is located under the protective cap.

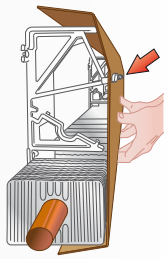
Shut-off or Opening: Turn the square section on the valve spindle to close or open the valve.

Presetting: Turn the adjustment screw with a slotted screwdriver fully to the right until it reaches the stop. Then turn the required number of rotations to the left according to the setting diagram.

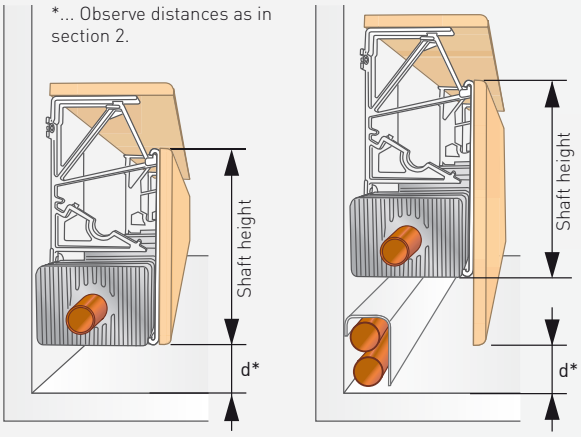


5.1 General

If the required skirting heating cladding is not mounted immediately, protect the mounted heating elements using their packaging boxes, for example (cut slits in the box, pass the bracket catches through). This effectively protects the heating elements from damage. >>



5.2 Classic skirting heating

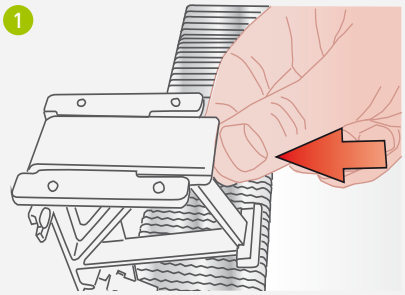


Please note the dimensions of the cladding in chapter 2.1. If the wooden skirting is mounted further from the floor (e.g. due to wall-mounted pipes), you must still comply with the air vent spacing (extend cladding further down)

For cladding of the Classic skirting heating provided by the customer, each bracket includes a mounting plate and mounting base with fastening screws (see also Chap. 3.1).

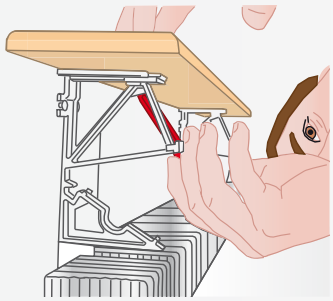
Virtually any wood is suitable as wooden cladding. It should be torsion free and dry (e.g. 3-layer board).

1



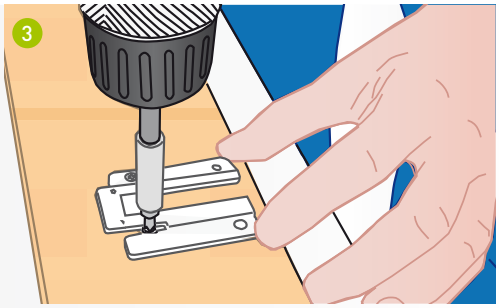
Push the mounting base into the bracket ...

2



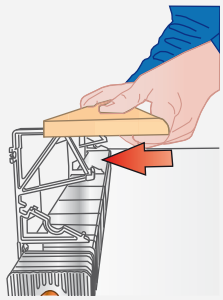
... and transfer the outline to the upper cladding.

3



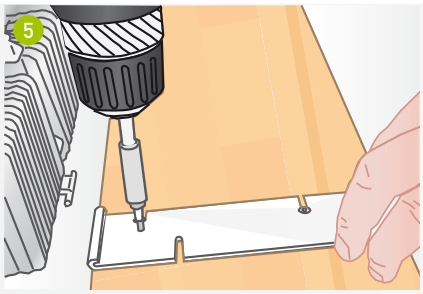
Screw the mounting base onto the upper cladding.

4



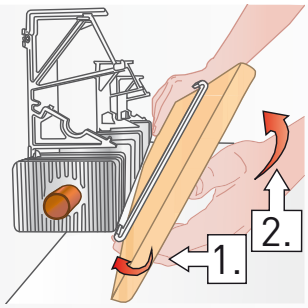
The upper cladding can now be pushed into place.

5

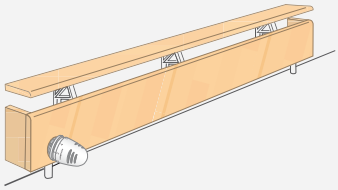


For the front cladding, the mounting plate is secured after adaptation to the brackets.

6



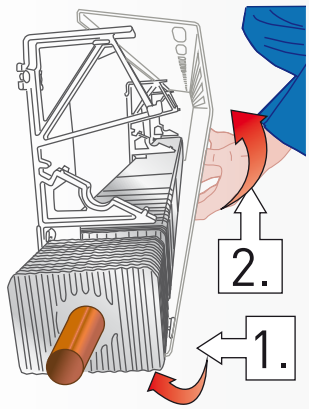
Attach the front cladding to the bottom spring and click it into the catch. Simple galvanized metal brackets are used for end connections.



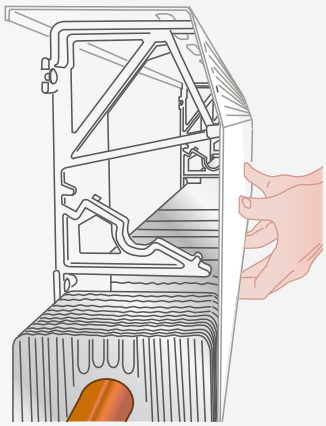
<< Drill a hole in the cladding in the axis of the valve head for the flow valves.

5.3 Delta skirting heating

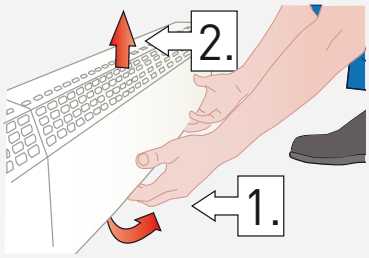
If uneven walls cause problems when snapping the upper edge into place, loosen the upper bracket screws. After locking the cladding into place, the screws can then be tightened again through the upper front hot air slit.



Fit the Delta at the bottom near the tension spring and click it into place at the top



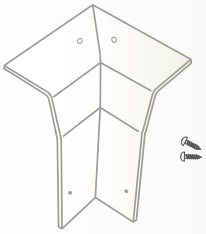
Delta cladding which has been clicked into place.



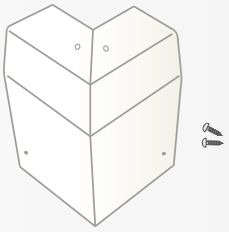
To remove the cladding, first pull it out at the bottom and lift it out upwards.

Connections etc.

The connecting elements are clipped in, inner corners, outer corners and the end caps are fastened subsequently using the enclosed screws to the front cladding (do not forget to drill).

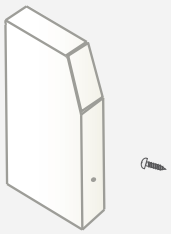


Inside corner 90°

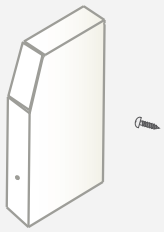


Outside corner 90°

Connecting element



End cap left

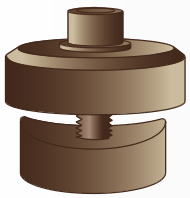


End cap right

The formed parts are attached with the supplied screws.

Use the Variotherm paint pen to paint the screw heads after mounting. >>

Round hole punch

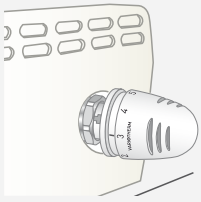


For the flow valves, punch a hole into the Delta cladding in the axis of the valve head using the appropriate round hole punch. The thermostat head will later protrude through this hole.

Hole diameter required:

ø 40 mm for mini skirting heating system,

ø 55 mm for Ia (1a), IIa (2a) + IIIa (3a) skirting heating system, and valves with actuator



Example

6.1 Leak-tightness test

Construction project: _____

Building owner/Occupant: _____

Client: _____

Heating installation technician: _____

Architect: _____

Other: _____

The Variotherm skirting heating circuits are to be tested for leak-tightness using a water pressure test. The test pressure must be no less than 4 bar and no greater than 6 bar. Due to the initial pipe expansion it may be necessary to re-pump the test pressure. If there is a risk of freezing, appropriate measures should be taken, e. g. use of antifreeze and controlling the building's temperature.

The Leak-tightness test can also be carried out with compressed air as an alternative. The test pressure in this case is max. 3 bar.

- Skirting heating incl. cladding, connection and piping completed on: _____
- Pressure test started on: _____ with test pressure of ____ bar
- Pressure test finished on: _____ with test pressure of ____ bar
- The system water was treated (e.g. per ÖNORM H 5195-1, VDI 2035) ☐ Yes ☐ No
- Antifreeze was added to the system water ☐ Yes ☐ No
- Heating started on: _____

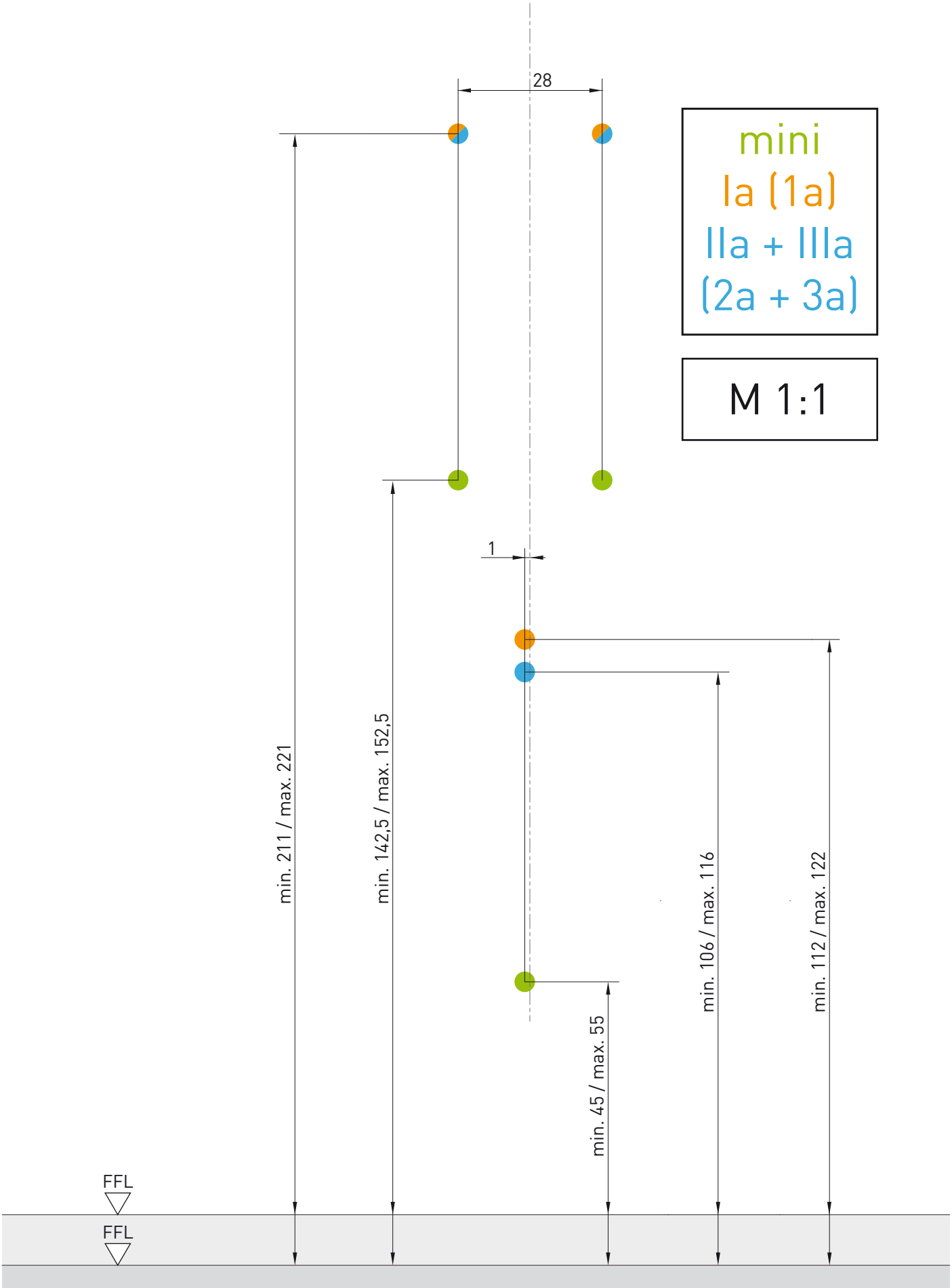
Approval:

Building owner/Occupant/Client	Construction management/Architect	Heating installation technician

6.2 Commissioning

The flow and return valves or the heating circuit shut-offs on the manifold must be opened. The entire system is to be vented thoroughly. The circulation pump may be switched on after venting. After commissioning, the Variotherm skirting heating system can be considered maintenance-free.

(Subject to technical modifications without notice.)


28
1
mini
Ia (1a)
IIa + IIIa
(2a + 3a)
M 1:1
min. 211 / max. 221
min. 142,5 / max. 152,5
min. 45 / max. 55
min. 106 / max. 116
min. 112 / max. 122
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