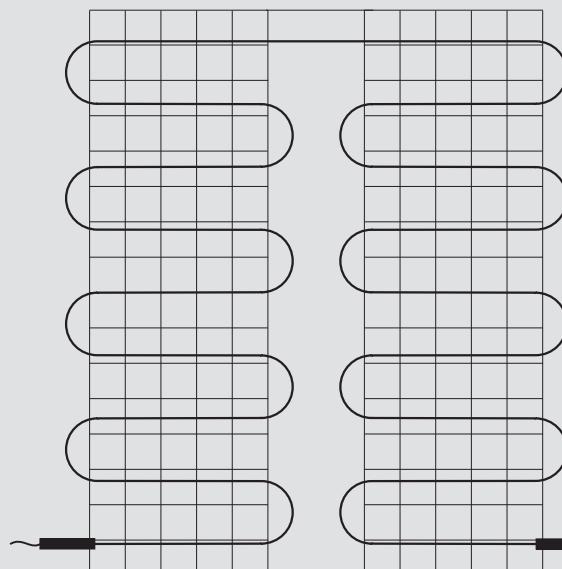


BEDIENUNG UND INSTALLATION OPERATION AND INSTALLATION UTILISATION ET INSTALLATION BEDIENING EN INSTALLATIE OBSLUHA A INSTALACE OBSLUHA A INŠTALÁCIA OBSŁUGA I INSTALACJA

Fußboden temperierung | Electric underfloor heating | Équilibrage de température plancher | Comfortvloerverwarming | Temperování podlahovým vytápěním | Temperovanie podlahového vykurovania | Wyrównanie temperatury podłogi

- » FTM 160/1
- » FTM 160/1.5
- » FTM 160/2
- » FTM 160/2.5
- » FTM 160/3
- » FTM 160/4
- » FTM 160/5
- » FTM 160/6
- » FTM 160/7
- » FTM 160/8



STIEBEL ELTRON

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SPECIAL INFORMATION

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GUARANTEE

ENVIRONMENT AND RECYCLING

SPECIAL INFORMATION

- The appliance may be used by children aged 8 and older and persons with reduced physical, sensory or mental capabilities or a lack of experience and know-how, provided that they are supervised or they have been instructed on how to use the appliance safely and have understood the potential risks. Children must never play with the appliance. Cleaning and user maintenance must not be carried out by children without supervision.
- The connection to the power supply must be in the form of a permanent connection. Ensure the appliance can be separated from the power supply by an isolator that disconnects all poles with at least 3 mm contact separation.
- To prevent hazards, the power cable must only be replaced (for example if damaged) by a qualified contractor authorised by the manufacturer, using an original spare part.
- Fix the appliance in position as described in chapter "Installation / Preparations".

OPERATION

General information

OPERATION

1. General information

The chapters "Special information" and "Operation" are intended for appliance users and qualified contractors.

The chapter "Installation" is intended for qualified contractors.



Notice

Read these instructions carefully before using the appliance and retain them for future reference.
Pass on these instructions to a new user if required.

1.1 Safety instructions

1.1.1 Structure of safety instructions



SIGNAL WORD Type of risk

Here, possible consequences are listed that may result from failure to observe the safety instructions.

► Steps to prevent the risk are listed.

1.1.2 Symbols, type of risk

Symbol Type of risk



Injury



Electrocution

1.1.3 Signal words

SIGNAL WORD Meaning

DANGER Failure to observe this information will result in serious injury or death.

WARNING Failure to observe this information may result in serious injury or death.

CAUTION Failure to observe this information may result in non-serious or minor injury.

1.2 Other symbols in this documentation



Notice

General information is identified by the adjacent symbol.
► Read these texts carefully.

Symbol

Meaning



Property damage
(appliance damage, consequential losses and environmental pollution)



Appliance disposal

- This symbol indicates that you have to do something. The action you need to take is described step by step.

1.3 Information on the appliance

Symbol



Meaning

Underfloor heating system (direct action)

1.4 Units of measurement



Notice

All measurements are given in mm unless stated otherwise.

2. Safety

2.1 Intended use

The heating mat is used for electric underfloor heating in e.g. bathroom, kitchens, sauna lobbies, hallways or other living areas and in indoor swimming pools and other wet rooms.

The appliance is intended for domestic use. It can be used safely by untrained persons. The appliance can also be used in non-domestic environments, e.g. in small businesses, as long as it is used in the same way.

Any other use beyond that described shall be deemed inappropriate. Observation of these instructions and of the instructions for any accessories used is also part of the correct use of this appliance.

2.2 General safety instructions



WARNING Injury

The appliance may be used by children over 8 years of age and persons with reduced physical, sensory or mental capabilities or a lack of experience and expertise, provided that they are supervised or they have been instructed on how to use the appliance safely and have understood the potential risks. Children must never play with the appliance. Cleaning and user maintenance must not be carried out by children without supervision.



Property damage

Only operate the heating mat when fully installed and with all safety equipment fitted.

2.3 Test mark

See type plate label, label on the warranty card or in the main junction box.

OPERATION | INSTALLATION

Settings

3. Settings

You can set the required floor temperature by means of an external floor temperature controller.

The floor temperature which can be achieved depends on the floor structure and the floor covering. Observe the information in the operating and installation instructions for the floor temperature controller.

Floor temperature controller with seven-day program

Energy saving operation is ensured by installing a floor temperature controller with seven-day program.

Using an individually definable seven-day program means that you can adapt the temperatures to your personal requirements by specifying when the heating mat will switch on and off. The self-learning, adaptive control unit automatically determines the preheating time for timer mode.

- For economical operation, adjust the time it switches off so that the appliance switches off approximately half an hour before the end of use.

Further information can be found in the operating and installation instructions for the floor temperature controller.

4. Cleaning, care and maintenance

The heating mat does not require any particular maintenance.

5. Troubleshooting

Problem	Cause	Remedy
The heating mat does not provide the necessary heating output.	The floor temperature controller is not set correctly.	Adjust the floor temperature controller to the maximum heating level. After waiting for a short time, check whether the floor is warming up.
	For floor temperature controllers with seven-day program: Operating times are not set correctly.	Check the time switch operating times and adjust if necessary.
	There is no power.	Check whether the fuses/MCBs in your distribution board have blown. If the fuses/MCBs blow/respond repeatedly, notify your heating contractor.

If you cannot remedy the fault, contact your qualified contractor. To facilitate and speed up your enquiry, please provide the serial number from the type plate (000000-0000-000000).

You will find the type plate on the warranty card in these instructions and in the main junction box.

INSTALLATION

6. Safety

Only a qualified contractor should carry out installation, commissioning, maintenance and repair of the appliance.

6.1 General safety instructions

We guarantee trouble-free function and operational reliability only if original accessories and spare parts intended for the appliance are used.



Property damage

Never switch on the heating mat when it is rolled up.



Notice

Operation of the heating mat is only permissible in conjunction with an external floor temperature controller including floor temperature sensor.

6.2 Instructions, standards and regulations



Notice

Observe all applicable national and regional regulations and instructions.



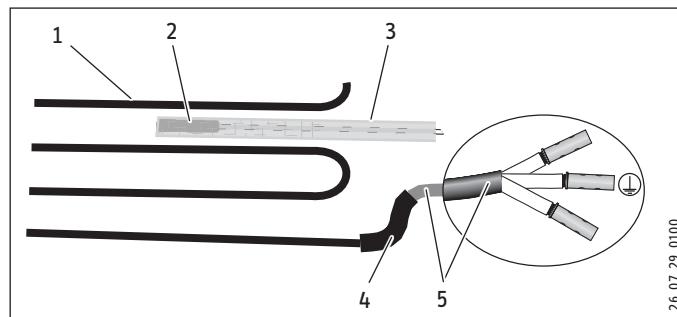
Notice

According to the Ecodesign Directive (the Commission's companion guidelines to Regulation (EU) No. 2015/1188), external temperature control must be provided. Only use floor temperature controllers that meet the required correction factors.

INSTALLATION

Appliance description

7. Appliance description



- 1 Heat conductor
- 2 Floor temperature sensors
- 3 Conduit (tube for installing the floor temperature sensor)
- 4 Female connection for heating conductor/cold lead
- 5 Cold lead (electrical power cable)

The heating mat is a surface heating element. The heating mat comprises a heat conductor which is sewn onto a self-adhesive mesh fabric.

The heating mat is glued directly to the screed or to levelling compound (e.g. floating screed). The heat generated by the heating mat is thus transferred directly to the floor.

The required floor temperature is set via an external floor temperature controller. The floor temperature controller is equipped with a floor temperature sensor. The floor temperature sensor must be installed at heating level.

The heating mat is switched on or off according to the floor temperature set on the floor temperature controller.

The floor temperature controller takes account of heat gain, e.g. due to sunlight or lighting, and provides frost protection.

The floor temperature controller is self-monitoring. In the event of a power failure, sensor break or sensor short-circuit, the heating automatically switches off.

7.1 Standard delivery

- Heating mat
- Two type plate labels (warranty card / main junction box)

7.2 Warranty card / installation diagram

You must complete the warranty card and installation diagram fully. The warranty is not valid without this proof.

The chapter "Preparation" contains information on completing the installation diagram.

8. Preparation

8.1 Installation site / Installation conditions



Property damage

Do not lay the heating mat at temperatures below 5 °C.



Notice

In new builds, allow the screed to cure for 4-6 weeks.
Only install the heating mat once this period has ended.

8.1.1 Substrate



Property damage

The heating mat may only be laid on floors. Walls or ceilings may not be used as installation surfaces.



Property damage

Never lay the heating mat on highly or normally flammable materials.

You may lay the heating mat on a variety of substrates, e.g. screed, hot mix asphalt or moisture-resistant chipboard. Observe the following information:

- Laying on hot mix asphalt: The substrate must be able to withstand temperatures of approx. 80 °C.
- Laying on wooden floors and chipboard: The heating mat may only be laid in combination with a separator mat. Suitable insulation boards can also be laid to improve impact sound insulation.
- Very sandy screed surfaces must be coated with an adhesive dispersion.

Thermal insulation

Appropriate floor insulation is essential to minimise heat losses from the floor.

- Please ensure that the thermal insulation complies with the latest standards.

8.1.2 Bathrooms and shower rooms

The heating mat must not be laid in areas where sanitary equipment such as baths, showers, freestanding WCs, etc. are to be installed.

INSTALLATION Preparation

8.1.3 Floor coverings

The heating mat is suitable for use with a range of floor coverings, e.g. tiles, vinyl flooring, design flooring, carpets, PVC or parquet.

! Property damage

Only use floor coverings which are suitable for underfloor heating systems.

Note that different floor coverings have different thermal conductivity values according to their type and the thickness of the material.

! Notice

According to the Energy Saving Ordinance (EnEV), the thermal resistance of the floor covering must not exceed $0.15 \text{ m}^2 \text{ kW}$. Observe the manufacturer's instructions for the selected floor covering.

Covering the floor

Additional floor coverings, e.g. carpets, may lead to a temperature build-up in the floor itself.

- Do not use floor coverings which are more than 10 mm thick.

8.2 Minimum clearances

! Property damage

Cupboards which cover the whole area must not be placed on heated areas.

! Property damage

The heating conductors on heating mats installed in parallel must not touch.

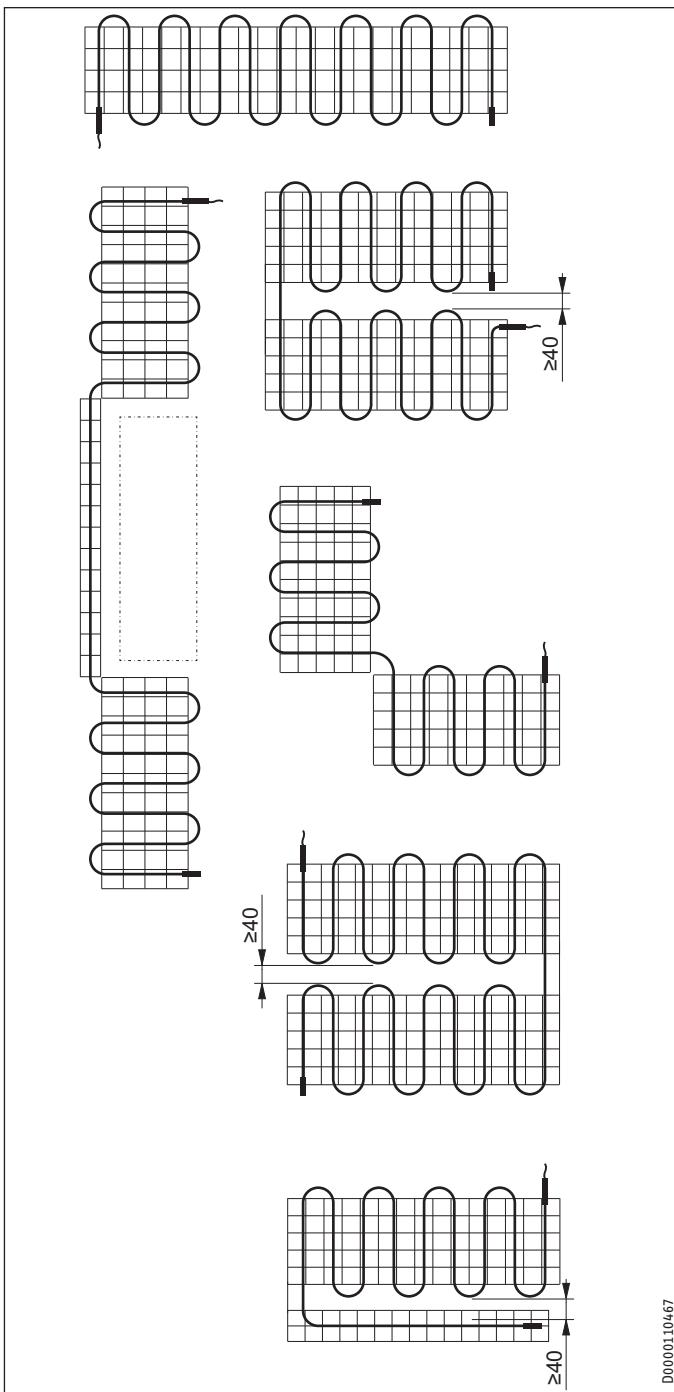
- Make sure that you observe a distance of at least 40 mm when installing heating mats in parallel.
- When laying the heating mats, ensure that you maintain a minimum clearance of 60 mm to conductive parts of the building such as water lines.

8.3 Installation diagram

You must draw up an installation diagram before installing the heating mat. See chapter "Sample installations" and "Minimum clearances" in this respect.

- Draw the position of the heating mats, the floor temperature controller, the floor temperature sensor and the cold lead on the installation diagram. Take account of where cupboards that fully rest on the floor are located and where sanitary ware is installed.

8.3.1 Sample installations



00000110467

INSTALLATION

Installation

8.4 Test measurement 1

Before installation, please check the total resistance and insulation resistance of the heating mats in their delivered condition.



Notice

The warranty is not valid without proof of this measurement.

- ▶ Measure the total resistance and insulation resistance of the heating mat.
- ▶ Check whether the measured values are in the permissible measuring range (see chapter "Specification / Data table").
- ▶ Enter the actual values on the warranty card.

8.5 Preparing the substrate

- ▶ Make sure that the substrate is clean, dry, solid and free from dirt and grease.
- ▶ Make sure that no sharp edges or pointed objects are protruding from the floor.
- ▶ If the substrate is not level, carry out levelling operations so as to avoid cavities beneath the heating conductor.
- ▶ Note that the heating mat may only be laid on wooden floors or chipboard in combination with an additional separator mat.

9. Installation

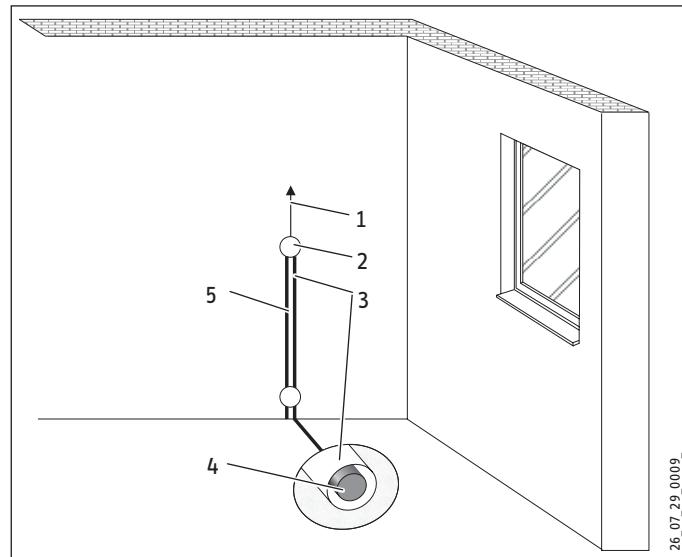
9.1 Installing the flush box



Property damage

In bathrooms and wet rooms, the flush box must only be installed outside safety zone 2.

The floor temperature controller is installed in a flush box. Two conduits for the cold lead and the floor temperature sensor must be inserted from the flush box down to the floor.



- 1 Power cable (NYM 3x1.5 mm²)
- 2 Flush box
- 3 Conduit for floor temperature sensor
- 4 Floor temperature sensors
- 5 Conduit for cold lead

- ▶ Choose an appropriate position for the floor temperature controller. Install the flush box at this position.
- ▶ Install an additional flush box if you would like to connect more heating mats in parallel.
- ▶ Always install an additional flush box if the cold lead or the floor temperature sensor lead is too short.

9.2 Installing floor temperature sensors

- The floor temperature sensor must be installed in a conduit (\varnothing 12 mm).
- The floor temperature sensor must be positioned directly below the heating mat and approx. 100 mm from the edge of the heating mat.
- The floor temperature sensor must be positioned exactly halfway between two heat conductors.
- The floor temperature sensor lead must not cross or touch the heat conductor.
- ▶ Choose an appropriate position for installing the conduit.
- ▶ Chisel out a groove in the screed using appropriate tools. Lay the conduit with the inserted sensor well.
- ▶ Insert the floor temperature sensor into the conduit.

9.3 Installing the cold lead



Property damage

The cold lead must be installed in a separate conduit. The cold lead and the floor temperature sensor lead must not be installed in the same conduit.

- ▶ Install an additional conduit (\varnothing 12 mm). Insert the cold lead into the conduit.
- ▶ Make sure that the female connection for the heat conductor/cold lead is not subjected to a tensile load.

INSTALLATION

Installation

9.4 Laying the heating mat

! Property damage

- ▶ Do not cut, squash or kink the heating conductor on the heating mat.
- ▶ Ensure that heat conductors do not cross over one another.



Notice

- ▶ You may shorten and extend the cold lead as long as you do not change its cross-section.

! Property damage

- ▶ Do not lay the heating mat across expansion joints or through/beneath insulating material.

! Property damage

- ▶ You must not lay heating mats below cupboards that rest fully on the floor.

! Property damage

- ▶ Do not use nails or other metal objects to attach the heating mat to the floor.
- ▶ Only stand on the heating mat if absolutely necessary. Take any necessary protective measures to avoid mechanical damage (e.g. shoes with rubber soles).

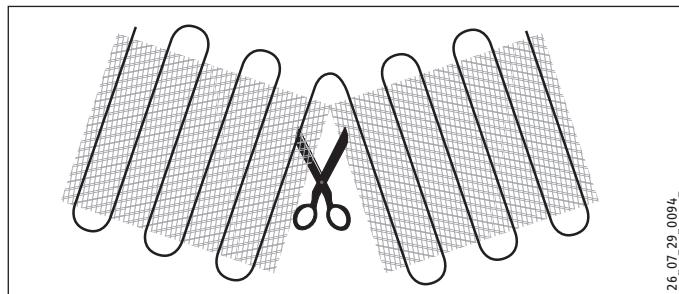
! Property damage

- ▶ Do not use penetrating fixing materials in the vicinity of the heating mat, e.g. screws and rawl plugs for door stoppers.

! Property damage

- There is an adhesive surface on the underside of the heating mat. The protective foil on the adhesive surface must be removed for laying the heating mat.

- ▶ Unroll the heating mat with the self-adhesive side facing down, in accordance with the installation plan. Remove the protective foil on the adhesive surface little by little as you proceed. At the same time, press the heating mat onto the substrate.



- ▶ For a change of direction, cut the heating mat backing fabric with scissors at the turning point. Make sure that you don't accidentally damage or cut through the heat conductor with the scissors. The heat conductor is sewn onto the backing fabric.

! Property damage

The smallest permissible bending radius is six times the diameter of the heating conductor.

- ▶ Carefully bend the heating conductor at the cutting point.
- ▶ Observe minimum clearances (see chapter "Preparation / Minimum clearances").
- ▶ Make sure that the floor temperature sensor is positioned centrally between two heat conductors and that the floor temperature sensor lead does not cross or touch the heat conductor.
- ▶ Make sure that heating mats do not overlap. Overlapping heating mats may lead to malfunctions.
- ▶ Make sure that the backing fabric is laid out without any creases.
- ▶ Press the heating mat firmly onto the floor.

9.5 Test measurement 2

After laying the heating mat, check the total resistance and insulation resistance of the heating mat to rule out the possibility of damage to the heating mat.



Notice

The warranty is not valid without proof of this measurement.

- ▶ Measure the total resistance and insulation resistance of the heating mats.
- ▶ Check whether the measured values are in the permissible measuring range (see chapter "Specification / Data table").
- ▶ Enter the actual values on the warranty card.
- ▶ Replace the damaged heating mat if the measured values deviate from the permissible range.

9.6 Laying the floor covering

! Property damage

Only use tile adhesive and levelling compound which are suitable for underfloor heating systems and which can withstand constant temperatures of at least 80 °C.

! Property damage

When applying tile adhesive and levelling compound, please observe the manufacturer's instructions concerning drying time and other manufacturer's information.

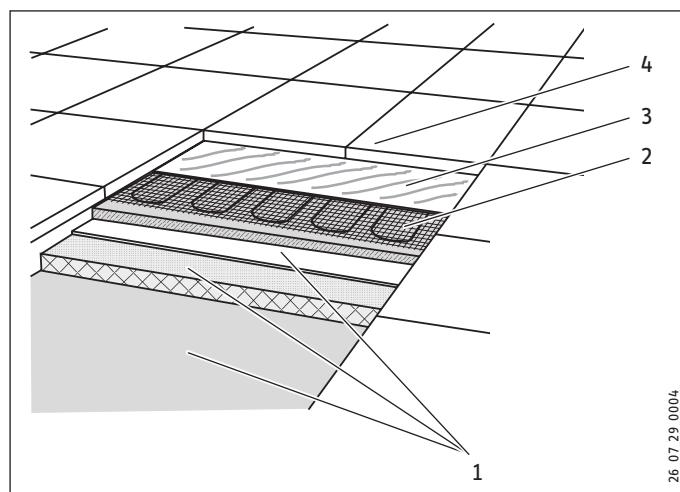


Notice

You must wait at least 3 days, depending on the humidity levels within the building, before starting to lay the floor covering.

INSTALLATION

Installation



- 1 Substrate with thermal insulation
- 2 Heating mat with heating conductor
- 3 Tile adhesive
- 4 Floor covering

9.6.1 Tiles

- ▶ Select an appropriate tile adhesive or levelling compound, as applicable.
- ▶ Seal the conduits so that tile adhesive cannot get into the conduits.
- ▶ Apply the tile adhesive and levelling compound as applicable over the entire surface. Take care not to damage the heating conductor.
- ▶ Make sure that the heat conductor is fully enclosed in tile adhesive.
- ▶ Make sure that no air bubbles form under the heating mat. Air bubbles may lead to higher temperatures.
- ▶ Lay the tiles in accordance with the manufacturer's instructions.

9.6.2 Carpet, PVC, parquet or cork

Before laying floor coverings such as carpet, PVC or cork, cover the entire surface of the heating mat with a levelling compound.

The levelling compound provides mechanical protection for the heating mats. Appropriate materials include free-flowing cement mortar, for example.

- ▶ Select a suitable levelling compound. Note that this levelling compound must be able to withstand constant temperatures of at least 80 °C.
- ▶ Seal the conduits so that the levelling compound cannot enter the conduits.
- ▶ Apply the levelling compound over the entire surface to a depth of 5-10 mm. Take care not to damage the heating conductor.
- ▶ Make sure that the heat conductor is fully enclosed in levelling compound.
- ▶ Make sure that no air bubbles form under the heating mat. Air bubbles may lead to higher temperatures.
- ▶ Allow the levelling compound to cure in accordance with the manufacturer's instructions.

- ▶ Fill settlement joints with suitable materials, e.g. silicone.
- ▶ Lay the floor covering in accordance with the manufacturer's instructions.

9.7 Test measurement 3

After laying the floor covering, check the total resistance and insulation resistance of the heating mats to rule out the possibility of damage to the heating mats.



Notice

The warranty is not valid without proof of this measurement.

- ▶ Measure the total resistance and insulation resistance of the heating mats.
- ▶ Check whether the measured values are in the permissible measuring range (see chapter "Specification / Data table").
- ▶ Enter the actual values on the warranty card.

9.8 Electrical connection



WARNING Electrocution

Carry out all electrical connection and installation work in accordance with national and regional regulations.



WARNING Electrocution

The connection to the power supply must be in the form of a permanent connection.

- ▶ Isolate the appliance from the power supply using an isolator with at least 3 mm omnipolar contact separation. Use mains isolators, fuses/MCBs, contactors, etc. for this purpose.
- ▶ Install an RCD with a nominal earth leakage current of $\leq 30 \text{ mA}$.



Property damage

The heating conductor must not be connected to the power supply.

- ▶ Only connect the cold lead to the power supply.



Property damage

Observe the type plate. The specified voltage must match the mains power supply.



Property damage

Make sure that the total connected load of the connected heating mats does not exceed the maximum breaking capacity of the floor temperature controller.



Notice

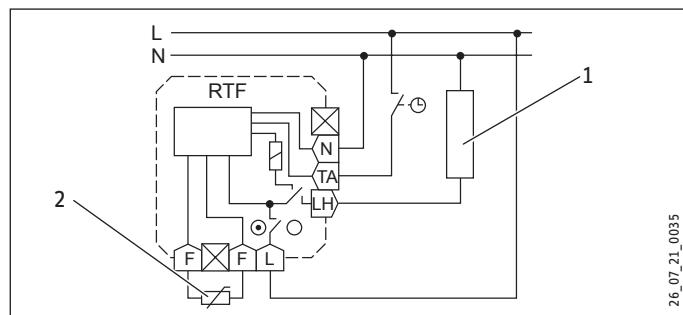
Electrical connection work must only be carried out by a qualified contractor and in accordance with these instructions.

INSTALLATION

Commissioning

Basic wiring diagram (e.g. for RTF floor temperature controller)

The basic wiring diagram below is provided for clarification purposes. The floor temperature controller wiring diagram is the only applicable wiring diagram (see operating and installation instructions for the floor temperature controller).



- 1 Heating mat
2 Floor temperature sensor



Notice

Observe the operating and installation instructions for the floor temperature controller when making the electrical connection.

- ▶ Connect the floor temperature sensor to the floor temperature controller.
- ▶ Connect the earth conductor to the earth connection (PE).
- ▶ Connect the heating mats to the floor temperature controller via the cold lead.
- ▶ Connect the floor temperature controller to the power supply.
- ▶ Check whether the earth conductor is connected correctly.

9.8.1 Connecting additional heating mats



Property damage

If you lay several heating mats in one room, the heating mats may only be connected in parallel to the mains power supply.

- ▶ Make sure that the total current does not exceed the maximum switching current and breaking capacity of the floor temperature controller. Information can be found in the operating and installation instructions for the floor temperature controller.

10. Commissioning

10.1 Initial start-up



Notice

Final commissioning can take place no sooner than 5 days after completion of the floor.

After laying the heating mat and applying tile adhesive or levelling compound, you must wait at least 2 days before switching on the heating mat for the first time.

- ▶ Switch on the heating mat for periods of max. 30 minutes over several days once this initial drying phase has been completed. This ensures that the tile adhesive and levelling compound cure slowly.
- ▶ If you have laid impermeable synthetic floor coverings, you must heat the floor for a period of approx. 36 hours. This ensures that there will be no residual humidity left in the floor.

10.2 Commissioning report

- ▶ Make sure that you have completed the warranty card and the installation diagram correctly. Observe the following information:
 - The installation diagram must show the exact position and number of the heating mats, the position of the flush boxes, cold leads and floor temperature sensor.
 - Measured values from all three test measurements must be entered on the warranty card.
- ▶ Enter the measured total resistance and insulation resistance on both type plate labels.
- ▶ Attach the type plate label for the warranty card to the specified position on this card.
- ▶ Attach the type plate label for the main junction box in a highly visible location on this box.

11. Handover

- ▶ Explain the functions of the appliance to the user.
- ▶ Make users aware of potential dangers.
- ▶ Hand over these operating and installation instructions to the user.
- ▶ Hand over the completed warranty card and the installation diagram to the user.
- ▶ Inform the user that these documents must be stored carefully and always be available in order to be able to trace the layout of the heating mat system in the future.

INSTALLATION Specification

12. Specification

12.1 Energy consumption data

The product data complies with EU regulations relating to the Directive on the ecodesign of energy related products (ErP).

Product information on electric individual room heaters to regulation (EU) 2015/1188

		FTM 160/1	FTM 160/1.5	FTM 160/2	FTM 160/2.5	FTM 160/3	FTM 160/4	FTM 160/5	FTM 160/6	FTM 160/7	FTM 160/8
Manufacturer		STIEBEL ELTRON									
Heating output											
Rated heating output P _{nom}	kW	0.160	0.240	0.320	0.400	0.480	0.640	0.800	0.960	1.120	1.280
Minimum heating output (standard value) P _{min}	kW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum continuous heating output P _{max,c}	kW	0.160	0.240	0.320	0.400	0.480	0.640	0.800	0.960	1.120	1.280
Auxiliary power consumption											
At rated heating output el _{max}	kW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
At minimum heating output el _{min}	kW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
In standby el _{SB}	kW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Type of heating output/room temperature control											
Single stage heating output, no room temperature control	-	-	-	-	-	-	-	-	-	-	-
Two or more manually selectable stages, no room temperature control	-	-	-	-	-	-	-	-	-	-	-
Room temperature control with mechanical thermostat	-	-	-	-	-	-	-	-	-	-	-
With electronic room temperature control	-	-	-	-	-	-	-	-	-	-	-
Electronic room temperature control and time of day control	-	-	-	-	-	-	-	-	-	-	-
Electronic room temperature control and day of week control	x	x	x	x	x	x	x	x	x	x	x
Other control options											
Room temperature control with presence detection	-	-	-	-	-	-	-	-	-	-	-
Room temperature control with window open detection	x	x	x	x	x	x	x	x	x	x	x
With remote control option	-	-	-	-	-	-	-	-	-	-	-
With adaptive control of heating start	x	x	x	x	x	x	x	x	x	x	x
With operating time limitation	-	-	-	-	-	-	-	-	-	-	-
With black bulb sensor	-	-	-	-	-	-	-	-	-	-	-

12.2 Data table

		FTM 160/1	FTM 160/1.5	FTM 160/2	FTM 160/2.5	FTM 160/3	FTM 160/4	FTM 160/5	FTM 160/6	FTM 160/7	FTM 160/8
Electrical data		205673	205674	205675	205676	205677	205678	205679	205680	205681	205682
Electrical data											
Connected load	W	160	240	320	400	480	640	800	960	1120	1280
Power supply	1/N/PE ~ 230 V										
Electrical resistivity (+10/-5 %)	Ω	326	224	163	133	110	78	67	53	45	41
Dimensions											
Length	m	2	3	4	5	6	8	10	12	14	16
Width	m	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Surface area	m ²	1	1.5	2	2.5	3	4	5	6	7	8
Versions											
IP rating		IPX7									
Values											
Nominal limit temperature, immersion heater	°C	80	80	80	80	80	80	80	80	80	80
Area-specific output	W/m ²	160	160	160	160	160	160	160	160	160	160
Heat conductor load	W/m	14	14	14	14	14	14	14	14	14	14

Guarantee

The guarantee conditions of our German companies do not apply to appliances acquired outside of Germany. In countries where our subsidiaries sell our products a guarantee can only be issued by those subsidiaries. Such guarantee is only granted if the subsidiary has issued its own terms of guarantee. No other guarantee will be granted.

We shall not provide any guarantee for appliances acquired in countries where we have no subsidiary to sell our products. This will not affect warranties issued by any importers.

Environment and recycling

We would ask you to help protect the environment. After use, dispose of the various materials in accordance with national regulations.

Warranty card

Customer

Name

Street

Postcode/Town

Telephone

Customer

Electrician

Date laid

Date installed

Company stamp

Affix type plate here

Test report

This guarantee is only valid if the warranty card is completed fully.
The insulation resistance must be $> 1 \text{ M}\Omega$.

Test measurement 1 (delivered condition)

Before installing the heating mat, the following values were measured:

Total resistance _____ Ω

Insulation resistance _____ $\text{M}\Omega$

Date _____ Signature _____

Test measurement 2 (after laying the heating mat)

After laying the heating mat, the following values were measured:

Total resistance _____ Ω

Insulation resistance _____ $\text{M}\Omega$

Date _____ Signature _____

Application

Cement screed

Wooden floor



Test measurement 3 (after laying the floor covering)

After laying the floor covering, the following values were measured:

Total resistance _____ Ω

Insulation resistance _____ $\text{M}\Omega$

Date _____ Signature _____

Installation diagram

Please create an accurate drawing of the room, the installed heating mats and the floor temperature sensor.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
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Date installed:

Model:

Total resistance (Ω):

Insulation resistance ($M\Omega$):

Fuse/MCB (A):

RCD (mA):



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Stand 9835