

Procedural Advice

EGGER Floorings on sub floor heating and cooling systems



General Information

All EGGER Floorings can also be laid in principle on subfloor heating as well as cooling systems.

As a basic principle EGGER Floorings are installed in a "floating" way. In the case of floating installation, the thermal resistances of the top flooring and of the underlayments must be considered. The total value of all components must be $\leq 0.15 \text{ m}^2\text{K/W}$, according to the CE regulations.

When using non-system-related underlay materials on screed with under floor heating, every warranty will be rejected in regards to the effective thermal resistance ($\text{m}^2 \text{K/W}$).

When installing on mineral sub-floors, it is necessary to lay a vapour control layer, with an SD value $> 75 \text{ m}$, as a damp barrier prior to the underlayment for sound reduction, on the entire surface and extending up the wall.

The surface temperature of the heated flooring area may not exceed 28°C (82.4°F).

Specially designed EGGER Floorings can also be installed using full faced gluing, when the heating system is integrated in the concrete.

With glue down application the thermal resistance decreases significantly.

In the construction phase of the floor heating system all involved parties (constructor, architect, heating engineer, heating installer, flooring installer and floor covering manufacturer) should cooperate. All heated floor construction requires use-related planning and coordination with regard to the heating system and the screed to ensure a damage-free and optimal functioning system in the long term.

Before starting the floor covering work, existing old floor coverings must be removed and the readiness for laying of the subfloor (evenness, bearing capacity, moisture) must be checked in accordance with the information/specifications of the EGGER installation instruction. In addition to the usual tests of the laying substrate, the underfloor heating/cooling must be tested for function (functional heating/cooling) and, in addition, proof of proper heating and cooling of the heated screed construction must take place at all times of the year and be provided by means of a heating and cooling protocol.

Functional Heating and Screed Drying

A distinction is made between functional heating and screed drying during heating of the load dispatching or thermal transfer layer.

Functional heating

To comply with DIN EN 1264-4 a functional heating must be carried out. Functional heating process is proof for the heating installer that the system works properly, without deficits. As part of the heating system installation, it is required to run and to document the course of the functional heating with regard to the manufacturers' manual and the corresponding heating protocols.

Begin the heating period for cement-based concrete at the earliest after 21 days, for calcium sulphate concrete at the earliest after 7 days. **Attention:** Take note of the manufacturer's instructions!

- Start the heating period with a flow temperature of 25°C (77°F) which should be maintained for 3 days.
- Then increase the flow temperature until the maximum design flow temperature is reached, usually 45°C (113°F).
- Maintain the maximum design flow temperature over a period of 4 days – do not switch off during the night.

Please note:

The functional heating does not guarantee that the screed has the necessary residual humidity for installation. Therefore, a screed drying time and/or a screed dry heating for readiness for covering is required.

Screed dry heating for readiness for covering

Screed dry heating means driving out the residual humidity of the screed until readiness for covering.

Start the heating period for cement-based concrete at the earliest after 28 days, for calcium sulphate concrete at the earliest after 14 days.

Attention: Take note of the manufacturer's instructions!

Requirement for the maximum moisture of screed (CM- measurement) if the is an EGGER Floor:

- cement-based concrete (nominal value): 1.8 %
- calcium sulphate concrete (nominal value): 0.3 %

Electric surface/ foil heating systems

Electric panel/foil heating systems are considered suitable substrates to a limited extent.

EGGER flooring may only be installed on electric surface / foil heating systems that:

- are equipped with temperature sensors and controllers
- are of a recent design and have the technical approval of the heating manufacturer for EGGER flooring
- are installed full-surface – individual partial sections (e.g. a partial installation only in the walking areas in the bedroom) are not approved so as to avoid heat gradients in the floor area and to ensure an even heat distribution
- are not night storage heaters and if,
- in the case of foil heating systems, an underlay mat with a maximum thickness of 3 mm and a pressure stability of at least CS 60 kPa is installed (according to the installation instructions of the respective heating manufacturer)
- in the case of electric mat heaters (mesh), these have been implemented in the screed (in accordance with the installation instructions of the respective heater manufacturer).

Flooring heating systems, which heat and cool down

These systems are generally suitable, if the points, mentioned under chapter electrical flooring heating, are fulfilled. In the case of cooling down systems, the surface temperature is not allowed to fall below 15 °C (59°F). A professional installation of a dew-point sensor is necessary to control possible arising condensation.

Notes

Due to the technical characteristics of the natural materials wood and cork and depending on the climate conditions of the room during the heating period it may lead to gaps afterwards. Where the formation of gaps is equal in general, there is no quality defect. (Source: Bundesverband Flächenheizungen und Flächenkühlungen e.V., Informationsdienst Flächenheizung + Kühlung BVF, Einsatz von Bodenbelägen auf Flächenheizungen und –Kühlungen- Anforderungen und Hinweise, Richtlinie 9 (Seite 7, Absatz 4.2), Stand Januar 2015). Afore mentioned information is also valid for EGGER Floorings, because all our floorings are wood-based products and react to fluctuations in the climatic condition of the room.

The requirements for subfloor preparation and installation as mentioned in our product specific installation instructions must be followed.

Contact

Do not hesitate to contact for further question the team of Technical Customer Service:

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Literature reference

Bundesverband Flächenheizungen und Flächenkühlungen e.V., Informationsdienst Flächenheizung + Kühlung BVF, Einsatz von Bodenbelägen auf Flächenheizungen und –Kühlungen- Anforderungen und Hinweise, Richtlinie 9, Stand Januar 2015
Online: http://www.flaechenheizung.de/Dokumente-Download-Node_17350.html

Annex

Protocol functional heating
Protocol heating up and cooling down

Protocol Functional Heating

Functional heating

When finishing the heating installation a heating protocol about the functional test must be issued for the flooring installer according to VOB DIN 18365. The functional heating is to be done according to DIN EN 1264-4.

Begin the heating period for cement-based concrete at the earliest after 21 days, for calcium sulphate concrete at the earliest after 7 days.

Attention: Take care of manufacturer's instructions!

- Start the heating period with a flow temperature of 25°C (77°F) which should be maintained for 3 days.
- Then increase the flow temperature until the maximum design flow temperature is reached, usually 45°C (113°F).
- Maintain the maximum design flow temperature over a period of 4 days – do not switch off during the night.

Protocol heating up till functional test of floor heating system

Constructor / Building Owner: Construction site / Building:
 Heating engineer: Floor / Flat:
 Heating system: Construction Manager:

1. Type of screed (product):
2. Used bonding agent:
3. Installation of heated screed finished on:

Day	Flow Temperature SET Value	Flow Temperature Actual Value (Remarks)	Date / Time	Signature
1.	25°C / 77°F			
2.	25°C / 77°F			
3.	25°C / 77°F			
4.	35°C / 95°F			
5.	45°C / 113°F			
6.	45°C / 113°F			
7.	45°C / 113°F			
8.	45°C / 113°F			

4. Functional heating:
5. End of functional heating on:
6. The functional heating was interrupted / not interrupted? If yes, fromtill
7. The rooms were ventilated draught-free and all windows and exterior doors were closed after the floor heating was switched off.
yes / no
8. The floor heating system was approved for further construction measures with an outside temperature of°C / °F.
..... The heating system was, in doing so, inoperative.
..... The flooring was heated, in doing so, at flow temperature of°C / °F.
9. Confirmation = Stamp, date, place and signature of constructor / building owner, construction manager/architect and heating engineer.

Heating Up and Cooling Down Protocol for Screed Drying

Screed dry heating for readiness for covering

The screed drying for readiness for covering should follow after functional heating directly. Thereby do not switch the heating off or reduce the flow temperature. Start the heating period for cement-based concrete at the earliest after 28 days, for calcium sulphate concrete at the earliest after 14 days. Attention: Take care of manufacturer's instructions! When calculating the duration to screed drying for readiness for covering, add the days (28 or 14) to the table screed drying day. Screed drying for readiness for covering is achieved when the requirements on residual moisture (see manufacturer's specification floor covering) is reached within CM- measurement.

Protocol screed dry heating before flooring installation (without night setback)

Constructor / Building Owner: Construction site / Building:
 Heating engineer: Floor / Flat:
 Heating system: Construction Manager:

1. Screed dry heating directly after functional heating, then further with table 3
2. Screed dry heating, not directly after functional heating, then further with table 2
3. Start dry heating on

table 2: Screed drying for readiness for covering

Screed Drying Day	Set Value Flow Temperature	Reading Flow Temperature	Date / Time	Signature Inspector
1.	25°C / 77°F			
2.	35°C / 95°F			
3.	45°C* / 113°F*			
4.	55°C* / 131°F*			

*or the maximum design flow temperature

afterwards go to table 3: Screed drying for readiness for covering

Screed Drying Day	Set Value Flow Temperature	Reading Flow Temperature	Date / Time	Signature Inspector
Day.....	55°C / 131°F			
Day.....	55°C / 131°F			
Day.....	55°C / 131°F			
Day.....	55°C / 131°F			
Day.....	55°C / 131°F			
Day.....	55°C / 131°F			
Day.....	Foil test carried out 1)2)			
Day.....	55°C			
Day.....	55°C			
Day.....	55°C			
Day.....	Foil test carried out again 1)2)			
Day.....	Check moisture level 2)			

- 1) according to the constructor
- 2) If still wet, continue to heat. If not wet anymore, do CM measurement.

table 4: Heating reduction after achieving the screed drying for readiness for covering

Screed Drying Day	Set Value Flow Temperature	Reading Flow Temperatur	Date / Time	Signature Inspector
Day.....	45°C* / 113°F			
Day.....	35°C / 95°F			
Day.....	25°C / 77°F			
Day.....	heating on automatic			

* or the maximum design flow temperature

4. Screed dry heating by means of automatic control / regulation? yes / no.....
If yes, product / type:
 5. End of screed dry heating on
 6. The rooms were ventilated during screed drying for readiness for covering according to the guidelines of the screed manufacturer?
yes / no
 7. The heated flooring surface was not covered and free of building material? yes..... / no
 8. Are there minimum 7 days between the determination of moisture in screed (readiness to install) or the last heating reduction day and the installation of the top flooring? yes / no
- If yes, heat again 2 days before starting the top floor installation with the maximum design flow temperature and do a moisture measurement once more. yes / no

table 5: Measured moisture in screed

Object	Room	Top Flooring	i.a. measuring point	SET Value in %	Reading Value in %

9. Begin of the EGGER Flooring installation on
10. End of EGGER Flooring installation on

Confirmation with date and signature

	Constructur/ Owner assigned	Building	Construction Manager / Architect supervised	Heating Engineer carried out	Installer / Fabricator carried out
Screed dry heating					
Foil test					
Moisture measurement					

Provisional note:
These processing instructions were prepared based on the best available information and with due diligence. The information provided is based on practical experience, in-house testing and reflects our current level of knowledge. It is intended for information only and does not constitute a guarantee in terms of product properties or suitability for specific applications. We accept no liability for any mistakes, errors in standards, or printing errors. In addition, technical changes may result from the further development of EGGER flooring produced by us, as well as changes to standards and public law documents. Our General Terms and Conditions apply.