

## 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 Laminate Flooring as well as EGGER Comfort Flooring and Design Flooring 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  $\leq 0.15 \text{m}^2\text{K} / \text{W}$ , 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  $28^\circ\text{C}$  ( $82.4^\circ\text{F}$ ).

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 installing the top floor, consider the following:

- Remove all components of the old floor flooring
- Control/check the subfloor (flatness, bearing capacity, moisture) according to the specifications of the Egger installation instructions for specific flooring.
- Carry out functional heating and cooling test.
- Furnish proof of screed heating and cooling down procedures, by means of appropriate form.

## 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 to maximum moisture of screed (CM- measurement), where the floor covering is a laminate Flooring, Comfort or Design Flooring:

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

## Electric surface/ foil heating systems

Electric surface/ foil heating systems have limited suitability as a number of them can generate a surface temperature far more than 28°C (82.4°F).

EGGER approves the use of electric surface/ foil heating systems, if

1. the heating system is integrated in screed.
2. the foil heating is laying on the screed / of the concrete layer,
  - it is equipped with temperature sensors and controllers and it can be guaranteed that the surface temperature does not exceed 28°C (82.4°F) at any time.
  - have been designed relatively recently (from 2005)
  - the technical approval in combination with laminate floorings and multilayer, modular floorings (EGGER Comfort Flooring, EGGER Design Flooring) with clic connection, is given on the part of the manufacturer of the heating system.
  - are fully laid - individual partial sections (e.g. only the walking areas in the bedroom) are not approved, in order to avoid heat gradients in the floor area and to ensure even heat distribution.
  - are not night storage heaters.

## 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 Laminate Floorings, Comfort Floorings and Design Floorings from EGGER, 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

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### Bibliographical 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.flaeichenheizung.de/Dokumente-Download-Node\\_17350.html](http://www.flaeichenheizung.de/Dokumente-Download-Node_17350.html)

### Annex

1. Protocol functional heating
2. 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: .....
4. Functional heating: .....

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			

5. End of functional heating on: .....
6. The functional heating was interrupted / not interrupted? If yes, from .....till .....
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 for Readiness for Covering

### 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 <sup>1)2)</sup>			
Day.....	55°C			
Day.....	55°C			
Day.....	55°C			
Day.....	Foil test carried out again <sup>1)2)</sup>			
Day.....	Check moisture level <sup>2)</sup>			

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 Laminate Flooring, Comfort Flooring or Design Flooring installation on .....
10. End of Laminate Flooring, Comfort Flooring or Design Flooring installation on .....

Confirmation with date and signature:

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

Provisional note:

This technical data leaflet has been carefully drawn up to the best of our knowledge. It is intended for information only and does not constitute a guarantee in terms of product properties or its suitability for specific applications. It is based on practical experiences, our own tests and corresponds to our present state of knowledge. We accept no liability for any mistakes, errors in standards, or printing errors. In addition, technical modifications may result from the continuous development of EGGER Flooring, as well as from changes to standards and public law documents. Therefore, the content of these processing instructions cannot serve as instructions for use nor as a legally binding basis.