

**mfh:systems**  
modern floor heating



## COMPANY

**Martin Feller**

Product Management  
E-ENERGY Solutions



## 25 years of experience – History mfh systems GmbH

### 1995 JUPITER heating systems GmbH

- » System provider for sanitary connections and surface heating
- » Technological market leader in the field of dry underfloor heating systems
- » 2-stage direct sales to craft enterprises

### 2007 Acquisition by Danfoss

- » European sales
- » „Heating Solution“ comprising heat pump, panel heating, ventilation and control
- » 3-stage wholesale distribution

### 2012 Foundation of mfh systems GmbH

- » Management buyout
- » Product range:  
dry wall panel heating systems, electric panel heating systems and decentralised domestic ventilation
- » OEM and Distributors Sales



## Performance profile

- » Development and production company for surface heating systems & domestic ventilation
- » Specialist for drywall floor constructions
- » Over 20 years of production experience
- » 12.500.000 produced heating elements
- » Detailed documentation of the systems and applications



Development



Production



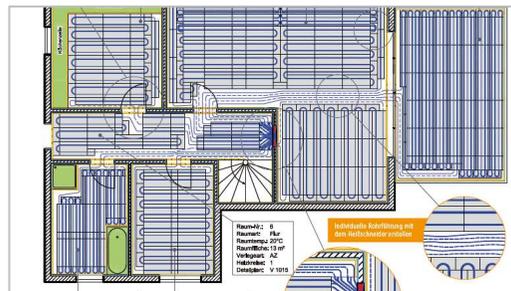
Documentation

## Supplementary services

- » Support hotline for partners
- » Photo studio (Inhouse)
- » Video production (image films, assembly films)
- » Calculation tools (quantity determination for quotations)
- » Data records for planning tools (Willms HT2000)
- » Web tools (floor planner)



Image film E-ENERGY



Planning Tools



Web Tools

## The entrepreneurs



### Andreas Piephans

Master of Engineering

20 years of professional experience with panel heating systems, floor constructions, residential ventilation

Marketing, Sales & Corporate Management

Background:  
JUPITER heating systems,  
Danfoss GmbH



### Daniel Schuschan

Master of Engineering

15 years of professional experience with panel heating systems, floor constructions, residential ventilation

Development & Technical Management

Background:  
JUPITER heating systems,  
Danfoss GmbH



### Achim Nierbeck

Merchant

> 40 years of professional experience with surface heating systems, floor constructions

Partner & Consultant

Background:  
Thermoval, KiTECH,  
JUPITER heating systems,  
Danfoss GmbH

## Main location in Belm (Osnabrück)



- » Development, administration and logistics
- » Individual commissioning
- » Daily forwarding traffic



## Production site in Vechta (Bremen)



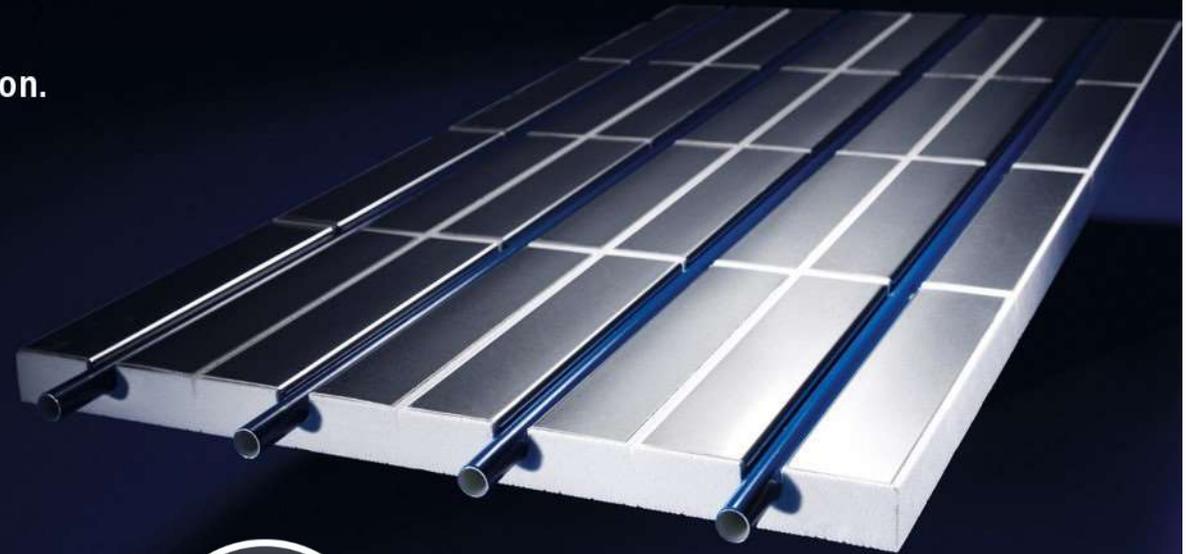
- » 1,700,000 elements Production capacity / year
- » Quality-tested series production
- » Own tool shop for expansion and maintenance of the production facilities

## Cooperation partners and quality monitoring



## Technology basis – mfh system elements

- 1 mfh system elements always featured high-quality insulation.
- 2 mfh conductive sheets are always factory-glued.
- 3 mfh conductive sheets are always made from aluminium.



Heating & cooling  
surfaces without cavities



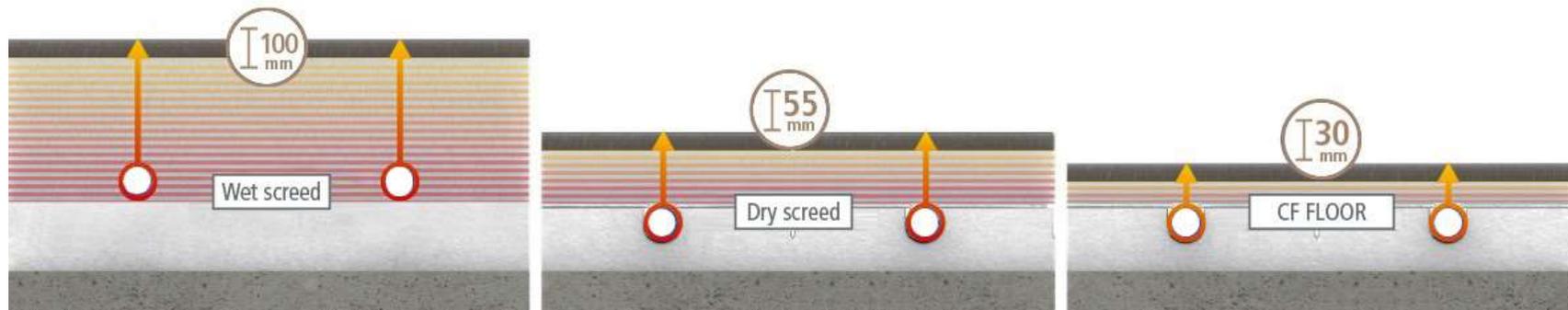
Predetermined breaking  
points / cutting lines



Ω Tube ducts &  
beaded ends

## The evolution of underfloor heating

From the screed storage heating to the modern demand heating



- A lot of moisture
- Normal heat conduction
- Poor controllability
- **Permanent heating**

- Dry installation
- Low thermal conductivity
- Low controllability
- **Permanent heating**

- Dry installation
- Good thermal conductivity
- Good controllability
- **Demand heating**

1970

2000

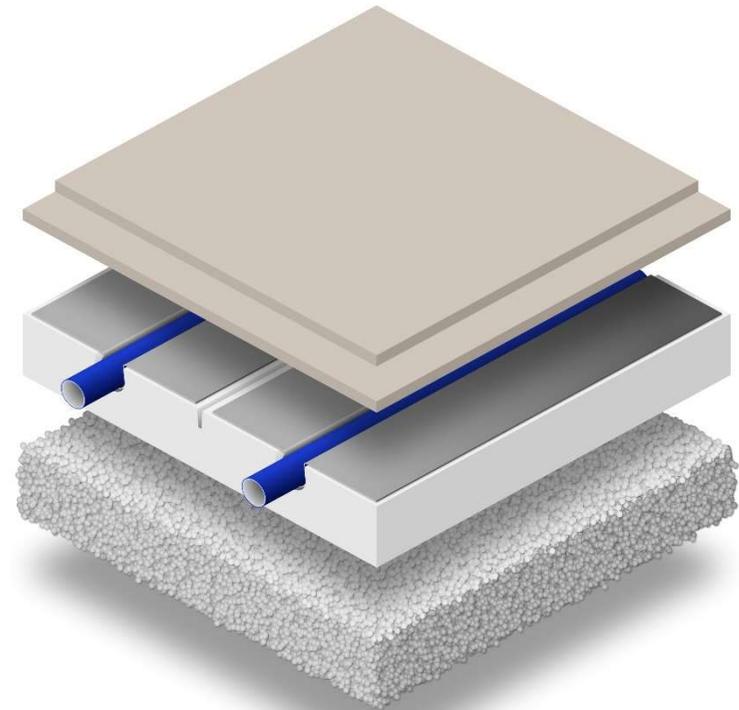
2010

## Competence in all layers

Thermal conductive layers | Dry screed

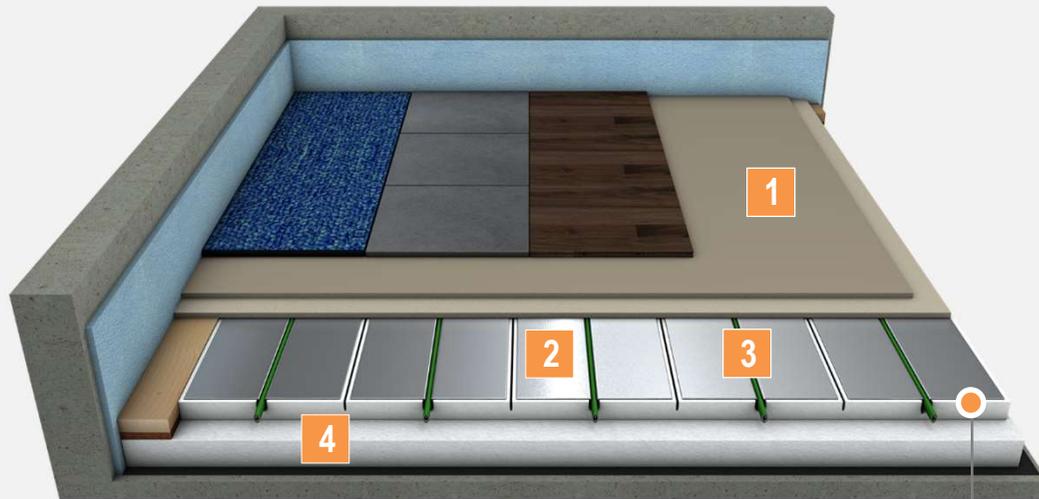
Heating elements

Heat-insulating floor compensation





## The future brings back the power – The new E-ENERGY IQ system



1 Dry screed (for all floor coverings)

2 Heating element E-ENERGY

3 System heating cable E-ENERGY

4 Additional insulation if necessary



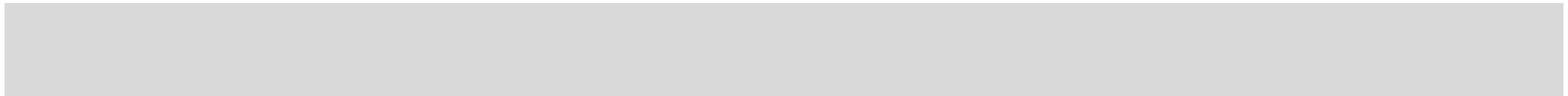
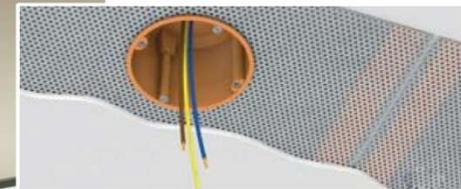
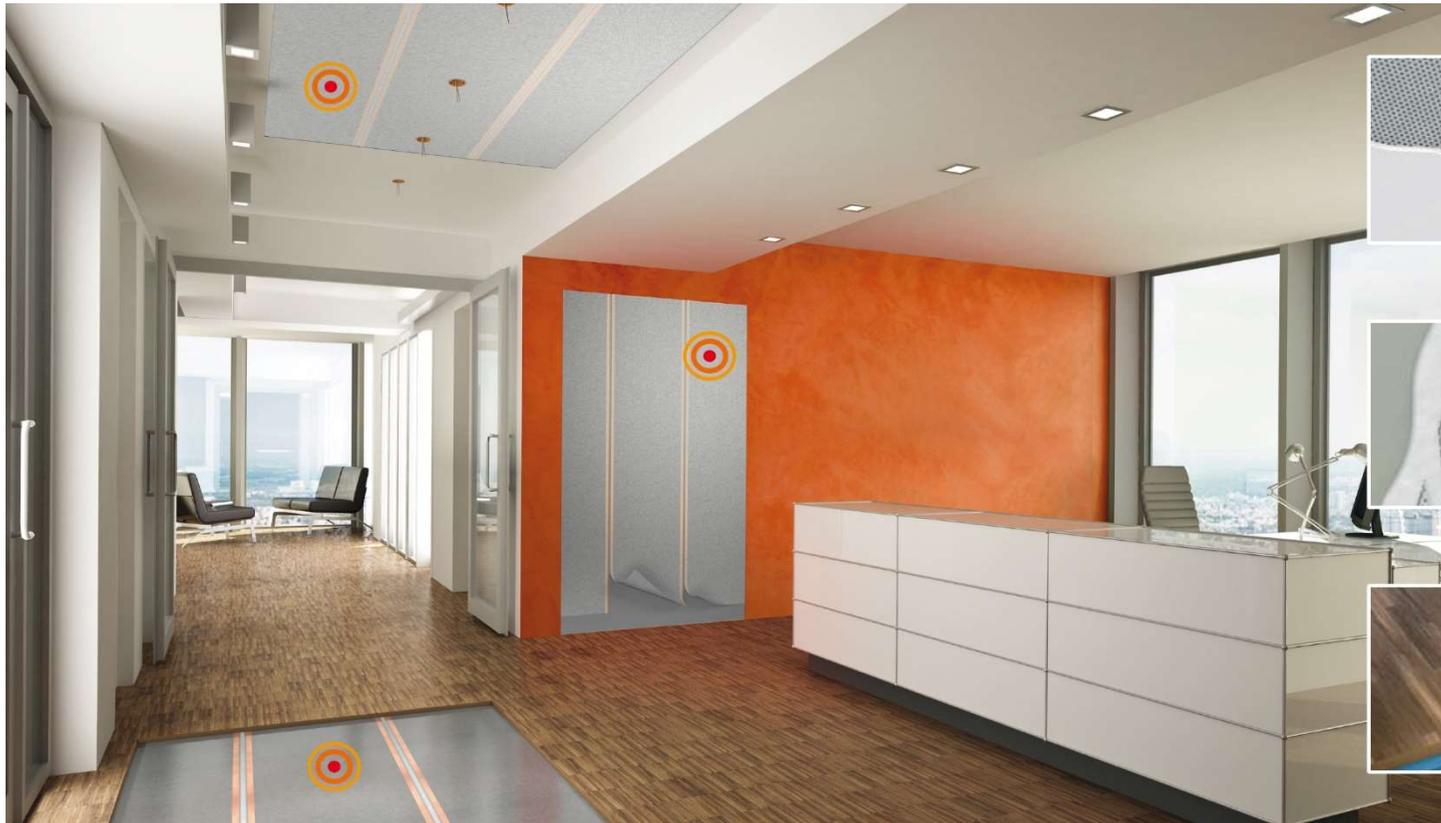
## New technology – E-ENERGY CARBON

Electrical heating foil for ceiling, wall and floor





## Installation on ceiling, wall and floor



## Decentralised housing allowance – AIRUNIT

- + Up to 90% heat recovery
- + Easy installation without complex pipe system
- + Hygienic and cost-effective



### Facts

Air performance	15   20   30   40 m <sup>3</sup> /h
Efficiency of heat accumulator	up to 90%
Power consumption	0.8   1.1   1.7   2.7 W
Sound pressure level (3m)*	12   18   22   30 dB(A)
Filter class	G3, regenerable

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\*Internal measurement, average value of exhaust and feed phase | roomside.

