Subfloor Heating and Cooling

Installation Guidelines

Purpose

This document outlines the requirements for installing Hakwood engineered flooring over subfloor heating and cooling systems. Pay special attention to the pre-installation heating protocol as this procedure may take up to several weeks.

These guidelines must be used in conjunction with the Hakwood Installation Instructions for Flooring document. All general requirements regarding:

- Climate control
- Surface preparation
- Storage and handling
- Environmental conditions
- Installation methods

as specified in the main document must be met in addition to the specific requirements detailed below.

Compatible Products

- Duoplank® 20 mm (3/4")
- Duoplank® 15 mm (5/8")
- Duoplank® Lite 14 mm (9/16")

WOOD SPECIES COMPATIBILITY

- Our engineered flooring with a European Oak or European Ash top layer
- For custom flooring using other wood species, compatibility must be confirmed with Hakwood technical department

System Requirements

ALL HEATING SYSTEMS MUST:

- Be specifically rated for use with wood flooring
- Include floor temperature sensors
- Have separate thermostats for individual room control
- Maintain required climate conditions
- Provide sufficient tensile strength for glue-down installation of the wood flooring

TEMPERATURE AND HUMIDITY LIMITS

- Room temperature: 18-24°C (65-75°F)
- Relative humidity in the room: 40-65%
- Water supply temperature must be regulated to ensure floor surface temperature never exceeds 28°C (82°F)

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Installation Protocol

PRE-INSTALLATION HEATING PROTOCOL

Only applicable for traditional hydronic systems, both in new screed and in renovation with milled grooves in existing screed

NEW SCREED

- Cement-based screed should be at least 28 days before starting heating protocol
- For anhydrite (or other gypsum-based screed), consult manufacturer's specifications for minimum age
- Room thermostat must be set high enough for system activation

EXISTING SCREED (OFTEN RENOVATION)

- All milled grooves must be filled prior to pre-installation heating protocol with suitable filling compounds specifically rated for heating systems
- Standard leveling compounds or tile adhesives are not acceptable for filling heating system grooves

1. RUN THE PROTOCOL:

- At the supply water distributor, start with supply water temperature 5°C (9°F) above room temperature
- Increase by 5°C (9°F) every 24 hours
- Continue until reaching maximum 45°C (113°F)
- Maintain maximum temperature for 24 hours
- Decrease by 5°C (9°F) every 24 hours until starting temperature
- Repeat cycle at least once

2. VERIFY SUBFLOOR MOISTURE CONTENT:

- Cement-based screed: maximum 1.8% CM (higher moisture content possible with suitable PU or epoxy moisture barrier IF approved by its manufacturer)
- Anhydrite screed: maximum 0.3% CM (moisture barriers not applicable for gypsum-based screeds)

DURING INSTALLATION

- Maintain subfloor temperature following adhesive manufacturer's temperature requirements
- Use only adhesives rated for heated floors
- Allow proper adhesive curing time

POST-INSTALLATION HEATING PROTOCOL

- Follow adhesive manufacturer’s advice before raising supply water temperatures
- Increase supply water temperature gradually by 2°C (3.6°F) per day until floor heating installer’s advised supply temperature is reached
- Never exceed 28°C (82.4°F) at floor surface.
- Maintain relative humidity of the room between 40-65%

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Important Warnings

- Avoid placing thick rugs or furniture without ventilation on heated floors
- Prevent rapid temperature changes
- For cooling systems: include proper condensation prevention
- Monitor each room's temperature individually
- Follow proper heating protocol at start of each heating season
- Use only adhesives specifically rated for heated floors

Technical Values

THERMAL RESISTANCE (R-VALUE):

- Duoplank 20mm (3/4"): 0.118 m²K/W (0.67 ft²·°F·h/BTU)
- Duoplank 15mm (5/8"): 0.088 m²K/W (0.50 ft²·°F·h/BTU)
- Duoplank Lite 14mm (9/16"): 0.082 m²K/W (0.47 ft²·°F·h/BTU)

Warranty

THE WARRANTY REMAINS VALID ONLY WHEN:

- All instructions in this document are followed
- Required temperature and humidity levels are maintained
- Heating protocol is followed before installation and after periods of inactivity
- Heat sensors are installed and monitored according to specifications

Technical Specifications Appendix

A. Heating System Types

1. TRADITIONAL HYDRONIC SYSTEMS

- Heat source: Boiler or heat pump
- Minimum 25 mm (1") screed coverage above heating pipes
- Maximum floor surface temperature: 28°C (82°F)
- In case of milled grooves, minimum coverage might be less than 25mm. In that case it is important to use lower supply temperatures to prevent from too high floor surface temperatures
- Must include distributor with proper mixing valves and controls
- Requires monitoring of supply and return temperatures

WHEN COOLING IS INCLUDED:

- Automatic dew point monitoring and control required
- Cooling supply temperature must be controlled based on room conditions
- Higher humidity levels accelerate dew point occurrence

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2. DRY CONSTRUCTION SYSTEMS

- Heat source: Boiler or heat pump
- Suitable for renovation projects due to minimal build-up height
- Must include proper heat distribution plates
- Maximum floor surface temperature: 28°C (82°F)
- Must provide sufficient tensile strength for glue-down installation

WHEN COOLING IS INCLUDED:

- Automatic dew point monitoring and control required
- Cooling supply temperature based on room climate conditions

3. ELECTRIC HEATING SYSTEMS

- Can be installed in screed or thin leveling compound
- Self-limiting systems strongly recommended
- Must include floor temperature sensors and controls
- Maximum floor surface temperature: 28°C (82°F)
- Must prevent rapid temperature fluctuations

B. Installation Protocol Details

HEATING PROTOCOL NOTES

- Cracks typically appear during cooling rather than heating phase, making the cooling phase of the pre-installation heating protocol equally critical for proper subfloor conditioning
- Full protocol must be completed before initial installation
- After periods of inactivity, only post-installation heating protocol required
- At start of each heating season, verify system function and increase temperature gradually

ADHESIVE REQUIREMENTS

- Use only adhesives specifically rated for heated floors. Follow adhesive manufacturer's guidelines for application and curing time
- Consult manufacturer for specific product recommendations

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