



RADIANT HEATING DESIGN FUNDAMENTALS

EXCERPT: DEALING WITH SOLID HARDWOOD FLOORING

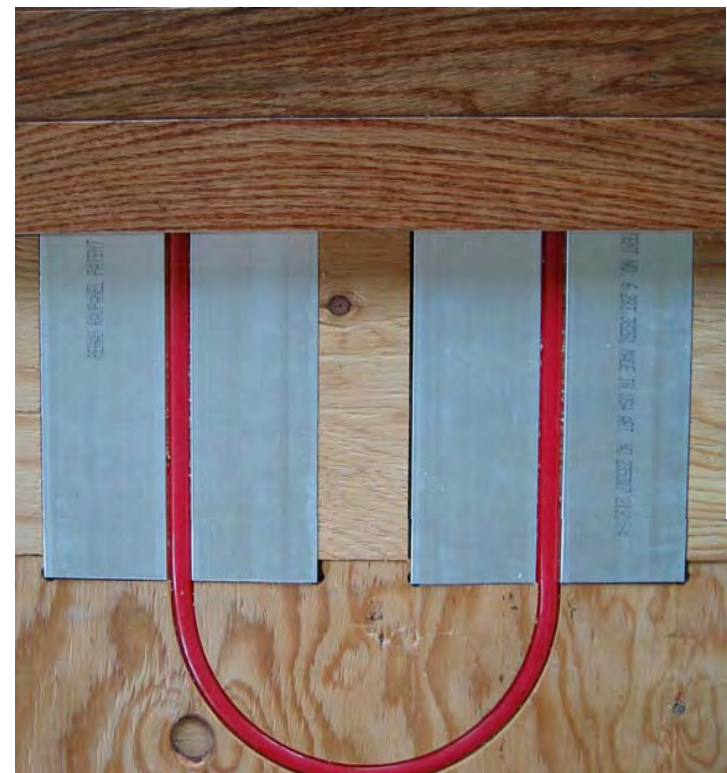
NOTES ON SOLID HARDWOOD FLOORING OVER RFH

FROM "DESIGN FUNDAMENTALS"

Temperature limits may reduce heat output with solid hardwood flooring

Issues:

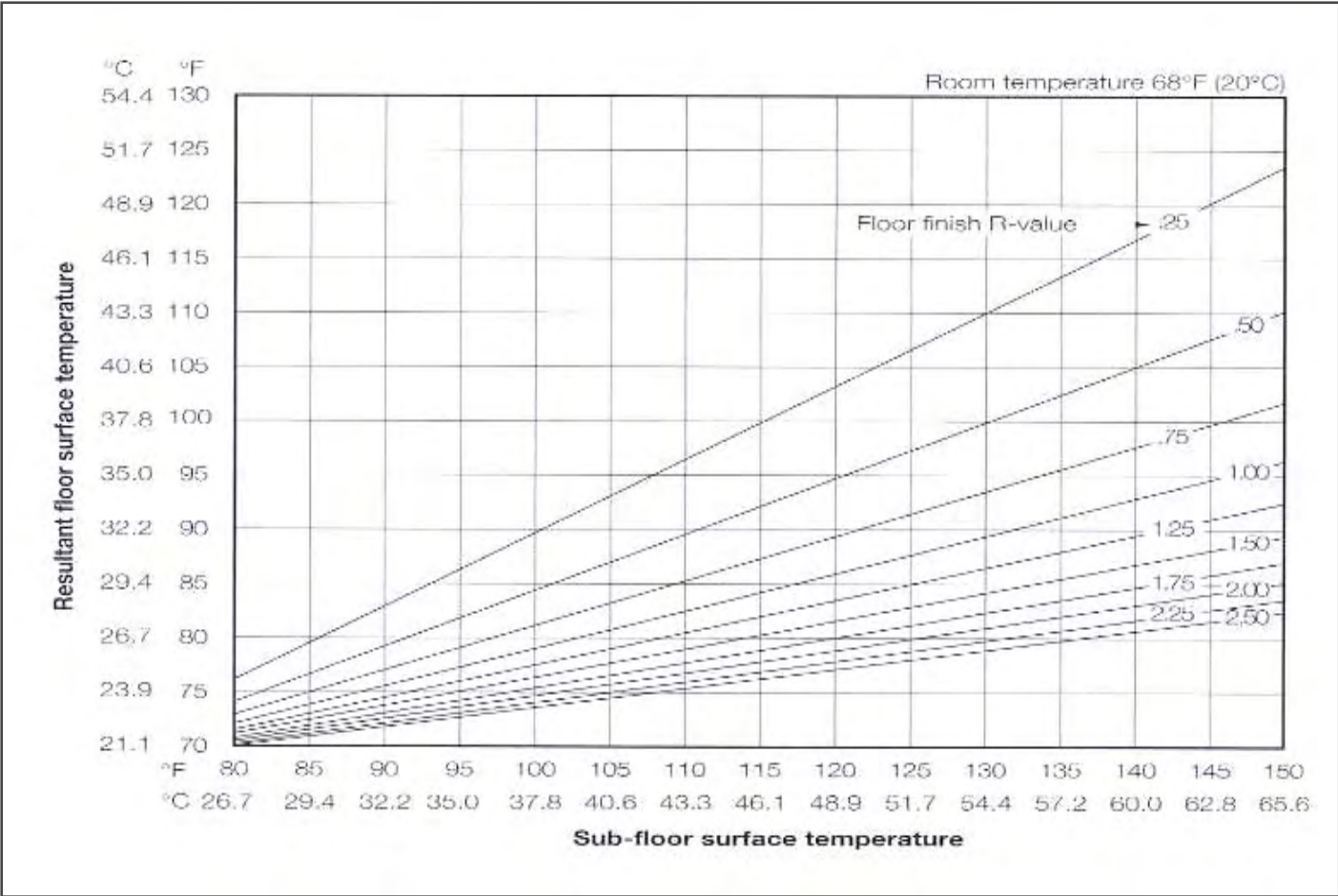
- With some species/brands of solid hardwood, the Maximum acceptable design temperature on the *bottom* of the board is **85°F**
- The R-Value for 3/4" solid hardwood is **0.68** (Table 3.1, pg. 3-2 REHAU Radiant Heating TM)
 - This will produce a maximum floor surface temperature= **77°F** on the top of the hardwood board (from Fig 4-2, Pg. 4-2, REHAU Radiant Heating Technical Manual). See next slide
- **Temperature of 77°F = 18 BTU/hr(ft²) output**
- This is a safe limit for design with solid hardwood over radiant floor heating, when the hardwood selected has a Maximum acceptable design temperature on the *bottom* of the board of **85°F**



Solid Hardwood Flooring

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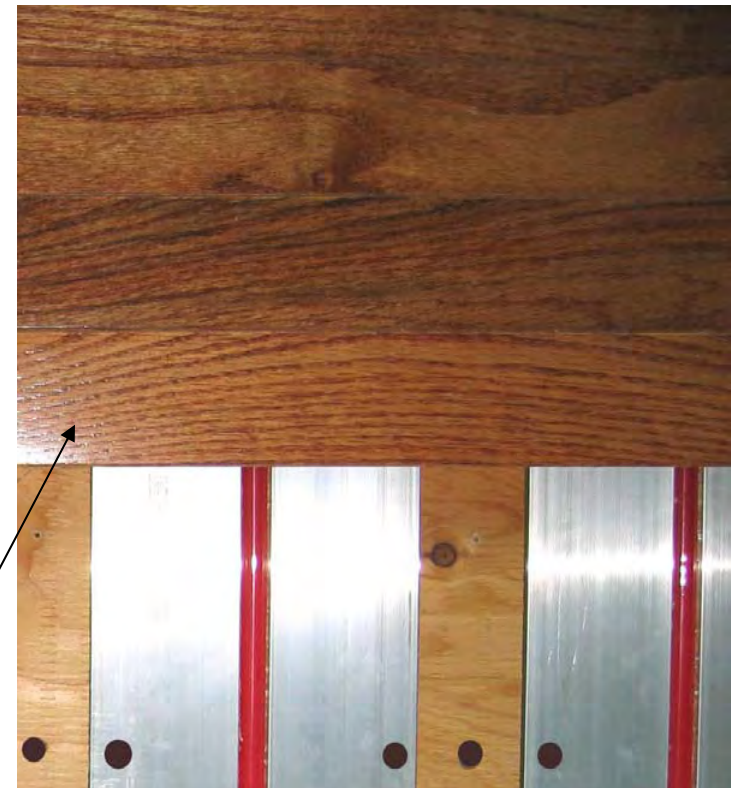
*Fig 4.2, Pg. 4-2 REHAU RFH Technical Manual

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Potential Solutions:

- Installers can control the under-floor hardwood temperature with the REHAU PD1/2 thermostat and remote floor sensor set into the floor below the hardwood
 - **Program Max Floor Temp = 85°F**
- Installer should use tighter pipe spacing to reduce localized hot spots
- Flooring contractor should use Quarter Sawn hardwood boards, Maximum 2 1/2" wide
- Flooring contractor must ensure that the hardwood acclimates to the space/relative humidity for 2+ weeks before installation (even longer with "wet" overpour)
- Add RAUPANEL™ to walls or ceiling as *supplemental heat source*
- Or, recommend engineered hardwood floors



Engineered Hardwood Flooring