

DIN EN 1264-3:2021-08 (E)

Water based surface embedded heating and cooling systems - Part 3: Dimensioning

| Contents | | Page |
|--|--|-------------|
| European foreword | | 3 |
| 1 | Scope | 4 |
| 2 | Normative references | 4 |
| 3 | Terms and definitions | 5 |
| 4 | Heating systems | 5 |
| 4.1 | Floor heating systems | 5 |
| 4.1.1 | Basic principles | 5 |
| 4.1.2 | Boundary conditions | 6 |
| 4.1.3 | Design | 9 |
| 4.1.4 | Peripheral areas | 11 |
| 4.2 | Ceiling heating systems | 12 |
| 4.2.1 | Basic principles | 12 |
| 4.2.2 | Boundary conditions | 12 |
| 4.2.3 | Design | 13 |
| 4.3 | Wall heating systems | 13 |
| 4.3.1 | Basic principles | 13 |
| 4.3.2 | Boundary conditions | 13 |
| 4.3.3 | Design | 14 |
| 5 | Cooling systems | 14 |
| 5.1 | General | 14 |
| 5.1.1 | Basic principles | 14 |
| 5.1.2 | Temperature differences | 14 |
| 5.1.3 | Regional dew point and standard indoor room temperature | 14 |
| 5.1.4 | Temperature difference between room and cooling water | 15 |
| 5.1.5 | Characteristic curves | 15 |
| 5.1.6 | Field of characteristic curves | 15 |
| 5.1.7 | Limit curve | 15 |
| 5.1.8 | Thermal insulation | 16 |
| 5.2 | Design | 16 |
| 5.2.1 | Pressure loss | 16 |
| 5.2.2 | Design specific cooling load | 16 |
| 5.2.3 | Determination of the design flow (inlet) temperature and the design specific thermal output | 16 |
| 5.2.4 | Determination of the design cooling water flow rate | 18 |
| Annex A (normative) Figures | | 19 |
| Bibliography | | 21 |