

WÄRMEABGABETABELLE

KERAMISCHEN - FUSSBODENBELAG

WÄRMEWIDERSTAND $R_{\lambda} = 0,0 \text{ m}^2 \text{ K/W}$

| Durchschnittliche Wassertemperatur in °C | | Entwurfsraum Temperatur in °C | | Verlegeabstand Heizrohr | | | | | | | |
|--|----|-------------------------------|-------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|
| | | | | 10 cm | | 12,5 cm | | 15 cm | | 20 cm | |
| | | | | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C |
| 30 | 15 | 100,5 | 24,0 | 92,5 | 23,5 | 86,5 | 23,0 | 75,0 | 22,0 | | |
| | 18 | 80,0 | 25,5 | 74,0 | 25,0 | 69,0 | 24,5 | 60,0 | 23,5 | | |
| | 20 | 66,5 | 26,0 | 61,5 | 26,0 | 57,5 | 25,5 | 50,0 | 25,0 | | |
| | 22 | 53,5 | 27,0 | 49,0 | 27,0 | 46,0 | 26,5 | 40,0 | 26,0 | | |
| | 24 | 40,0 | 28,0 | 37,0 | 27,5 | 34,5 | 27,5 | 30,0 | 27,0 | | |
| 35 | 15 | 133,5 | 26,5 | 123,0 | 26,0 | 115,0 | 25,0 | 100,0 | 24,0 | | |
| | 18 | 113,5 | 28,0 | 104,5 | 27,5 | 98,0 | 27,0 | 85,0 | 26,0 | | |
| | 20 | 100,5 | 29,0 | 92,5 | 28,5 | 86,5 | 28,0 | 75,0 | 27,0 | | |
| | 22 | 87,0 | 30,0 | 80,0 | 29,5 | 75,0 | 29,0 | 65,0 | 28,0 | | |
| | 24 | 73,5 | 31,0 | 67,5 | 30,5 | 63,5 | 30,0 | 55,0 | 29,0 | | |
| 40 | 15 | 167,0 | 29,5 | 154,0 | 28,5 | 144,0 | 27,5 | 125,0 | 26,0 | | |
| | 18 | 147,0 | 31,0 | 135,5 | 30,0 | 127,0 | 29,0 | 110,0 | 28,0 | | |
| | 20 | 133,5 | 31,5 | 123,0 | 31,0 | 115,0 | 30,0 | 100,0 | 29,0 | | |
| | 22 | 120,5 | 32,5 | 111,0 | 32,0 | 104,0 | 31,5 | 90,0 | 30,0 | | |
| | 24 | 107,0 | 33,5 | 98,5 | 33,0 | 92,0 | 32,5 | 80,0 | 31,5 | | |
| 45 | 15 | 200,5 | 32,0 | 185,0 | 31,0 | 173,0 | 30,0 | 150,0 | 28,0 | | |
| | 18 | 180,5 | 33,5 | 166,0 | 32,5 | 155,5 | 31,5 | 135,0 | 30,0 | | |
| | 20 | 167,0 | 34,5 | 154,0 | 33,5 | 144,0 | 32,5 | 125,0 | 31,0 | | |
| | 22 | 153,5 | 35,5 | 141,5 | 34,5 | 132,5 | 33,5 | 115,0 | 32,0 | | |
| | 24 | 140,5 | 36,5 | 129,5 | 35,5 | 121,0 | 34,5 | 105,0 | 33,5 | | |
| 50 | 15 | 234,0 | 34,5 | 215,0 | 33,5 | 201,0 | 32,0 | 175,0 | 30,0 | | |
| | 18 | 214,0 | 36,0 | 197,0 | 34,5 | 184,5 | 33,5 | 160,0 | 32,0 | | |
| | 20 | 200,5 | 37,0 | 185,0 | 36,0 | 173,0 | 35,0 | 150,0 | 33,0 | | |
| | 22 | 187,0 | 38,0 | 172,5 | 37,0 | 161,5 | 36,0 | 140,0 | 34,0 | | |
| | 24 | 174,0 | 39,0 | 160,0 | 38,0 | 150,0 | 37,0 | 130,0 | 35,5 | | |

| | |
|--|--|
| | = zulässige Fußbodentemperatur für Aufenthaltszonen ($\leq 29 \text{ °C}$) |
| | = zulässige Fußbodentemperatur für Randzonen ($\leq 35 \text{ °C}$) |
| | = über max. zulässiger Fußbodentemperatur von 35 °C |

Maximal zulässige Oberflächentemperaturen

| | |
|-------------------------------------|-------|
| Fußbodentemperatur Aufenthaltszonen | 29 °C |
| Fußbodentemperatur Badezimmer | 33 °C |
| Fußbodentemperatur Randzonen | 35 °C |
| Wandheizung | 40 °C |

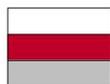
Diese Tabellen dienen als Richtlinie für die Wärmeabgabe bei der Montage einer herkömmlichen Fussbodenheizung (nach DIN4725). Für das Einfräsen einer Fussbodenheizung stehen solche Tabellen noch nicht zur Verfügung. Aufgrund unserer Erfahrung und Untersuchungen können wir aber feststellen, dass die Wärmeabgabe beim Einfräsen mindestens diesen Werten entspricht.

WÄRMEABGABETABELLE

KUNSTSTOFF- UND PARKETT- FUSSBODENBELAG

WÄRMEWIDERSTAND $R_{\lambda} = 0,05 \text{ m}^2 \text{ K/W}$

| Durchschnittliche Wassertemperatur in °C | | Entwurfsraum Temperatur in °C | | Verlegeabstand Heizrohr | | | | | | | |
|--|----|-------------------------------|-------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|
| | | | | 10 cm | | 12,5 cm | | 15 cm | | 20 cm | |
| | | | | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C |
| 30 | 15 | 74,0 | 22,0 | 69,0 | 22,0 | 65,0 | 21,0 | 58,0 | 21,0 | | |
| | 18 | 59,0 | 23,0 | 55,0 | 23,0 | 52,0 | 23,0 | 46,0 | 23,0 | | |
| | 20 | 49,0 | 25,0 | 46,0 | 25,0 | 43,0 | 24,0 | 38,0 | 24,0 | | |
| | 22 | 39,0 | 26,0 | 37,0 | 26,0 | 35,0 | 25,0 | 31,0 | 25,0 | | |
| | 24 | 29,0 | 27,0 | 27,0 | 27,0 | 26,0 | 27,0 | 23,0 | 26,0 | | |
| 35 | 15 | 98,0 | 24,0 | 92,0 | 24,0 | 87,0 | 23,0 | 77,0 | 22,0 | | |
| | 18 | 83,0 | 26,0 | 78,0 | 26,0 | 74,0 | 25,0 | 65,0 | 24,0 | | |
| | 20 | 74,0 | 27,0 | 69,0 | 27,0 | 65,0 | 26,0 | 58,0 | 26,0 | | |
| | 22 | 64,0 | 28,0 | 59,0 | 28,0 | 56,0 | 27,0 | 50,0 | 27,0 | | |
| | 24 | 54,0 | 29,0 | 50,0 | 29,0 | 48,0 | 29,0 | 42,0 | 28,0 | | |
| 40 | 15 | 123,0 | 26,0 | 114,0 | 26,0 | 108,0 | 25,0 | 96,0 | 24,0 | | |
| | 18 | 108,0 | 28,0 | 100,0 | 28,0 | 95,0 | 27,0 | 85,0 | 26,0 | | |
| | 20 | 98,0 | 29,0 | 92,0 | 29,0 | 87,0 | 28,0 | 77,0 | 27,0 | | |
| | 22 | 88,0 | 30,0 | 82,0 | 30,0 | 78,0 | 29,0 | 69,0 | 28,0 | | |
| | 24 | 79,0 | 31,0 | 73,0 | 31,0 | 69,0 | 30,0 | 62,0 | 30,0 | | |
| 45 | 15 | 147,0 | 28,0 | 137,0 | 27,0 | 130,0 | 26,0 | 115,0 | 25,0 | | |
| | 18 | 132,0 | 30,0 | 123,0 | 29,0 | 117,0 | 28,0 | 104,0 | 27,0 | | |
| | 20 | 123,0 | 31,0 | 114,0 | 31,0 | 108,0 | 30,0 | 96,0 | 29,0 | | |
| | 22 | 113,0 | 32,0 | 105,0 | 32,0 | 100,0 | 31,0 | 88,0 | 30,0 | | |
| | 24 | 103,0 | 33,0 | 96,0 | 33,0 | 91,0 | 32,0 | 81,0 | 31,0 | | |
| 50 | 15 | 172,0 | 30,0 | 160,0 | 29,0 | 152,0 | 28,0 | 134,0 | 27,0 | | |
| | 18 | 157,0 | 32,0 | 147,0 | 31,0 | 139,0 | 30,0 | 123,0 | 29,0 | | |
| | 20 | 147,0 | 33,0 | 137,0 | 32,0 | 130,0 | 31,0 | 115,0 | 30,0 | | |
| | 22 | 137,0 | 34,0 | 127,0 | 34,0 | 121,0 | 33,0 | 108,0 | 32,0 | | |
| | 24 | 128,0 | 36,0 | 119,0 | 35,0 | 113,0 | 34,0 | 100,0 | 33,0 | | |



= zulässige Fußbodentemperatur für Aufenthaltszonen ($\leq 29 \text{ °C}$)
 = zulässige Fußbodentemperatur für Randzonen ($\leq 35 \text{ °C}$)
 = über max. zulässiger Fußbodentemperatur von 35 °C

| | |
|---|-------|
| Maximal zulässige Oberflächentemperaturen | |
| Fußbodentemperatur Aufenthaltszonen | 29 °C |
| Fußbodentemperatur Badezimmer | 33 °C |
| Fußbodentemperatur Randzonen | 35 °C |
| Wandheizung | 40 °C |

Diese Tabellen dienen als Richtlinie für die Wärmeabgabe bei der Montage einer herkömmlichen Fussbodenheizung (nach DIN4725). Für das Einfräsen einer Fussbodenheizung stehen solche Tabellen noch nicht zur Verfügung. Aufgrund unserer Erfahrung und Untersuchungen können wir aber feststellen, dass die Wärmeabgabe beim Einfräsen mindestens diesen Werten entspricht.

WÄRMEABGABETABELLE

TEPPICHBELAG UND DICKEN PARKETT-FUSSBODENBELAG

WÄRMEWIDERSTAND $R\lambda = 0,1 \text{ m}^2 \text{ K/W}$

| | | Verlegeabstand Heizrohr | | | | | | | |
|--|-------------------------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|
| | | 10 cm | | 12,5 cm | | 15 cm | | 20 cm | |
| Durchschnittliche Wassertemperatur in °C | Entwurfsraum Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C |
| | | 30 | 15 | 58,0 | 21,0 | 55,0 | 21,0 | 53,0 | 20,0 |
| | 18 | 47,0 | 23,0 | 44,0 | 23,0 | 42,0 | 22,0 | 38,0 | 22,0 |
| | 20 | 39,0 | 24,0 | 37,0 | 24,0 | 35,0 | 24,0 | 32,0 | 23,0 |
| | 22 | 31,0 | 25,0 | 30,0 | 25,0 | 28,0 | 25,0 | 25,0 | 25,0 |
| | 24 | 23,0 | 26,0 | 22,0 | 26,0 | 21,0 | 26,0 | 19,0 | 26,0 |
| 35 | 15 | 78,0 | 22,0 | 73,0 | 22,0 | 70,0 | 22,0 | 63,0 | 21,0 |
| | 18 | 66,0 | 24,0 | 62,0 | 24,0 | 60,0 | 24,0 | 54,0 | 23,0 |
| | 20 | 58,0 | 26,0 | 55,0 | 26,0 | 53,0 | 25,0 | 47,0 | 25,0 |
| | 22 | 51,0 | 27,0 | 48,0 | 27,0 | 46,0 | 26,0 | 41,0 | 26,0 |
| | 24 | 42,0 | 28,0 | 40,0 | 28,0 | 39,0 | 28,0 | 35,0 | 27,0 |
| 40 | 15 | 97,0 | 24,0 | 92,0 | 24,0 | 88,0 | 23,0 | 80,0 | 22,0 |
| | 18 | 86,0 | 26,0 | 81,0 | 26,0 | 77,0 | 25,0 | 70,0 | 25,0 |
| | 20 | 78,0 | 27,0 | 73,0 | 27,0 | 70,0 | 27,0 | 63,0 | 26,0 |
| | 22 | 70,0 | 29,0 | 66,0 | 29,0 | 63,0 | 28,0 | 57,0 | 27,0 |
| | 24 | 62,0 | 30,0 | 58,0 | 30,0 | 56,0 | 29,0 | 50,0 | 29,0 |
| 45 | 15 | 117,0 | 25,0 | 110,0 | 25,0 | 105,0 | 24,0 | 95,0 | 24,0 |
| | 18 | 105,0 | 27,0 | 99,0 | 27,0 | 95,0 | 27,0 | 85,0 | 26,0 |
| | 20 | 97,0 | 29,0 | 92,0 | 29,0 | 88,0 | 28,0 | 80,0 | 27,0 |
| | 22 | 90,0 | 30,0 | 85,0 | 30,0 | 81,0 | 29,0 | 73,0 | 29,0 |
| | 24 | 82,0 | 32,0 | 77,0 | 32,0 | 74,0 | 31,0 | 66,0 | 30,0 |
| 50 | 15 | 136,0 | 27,0 | 128,0 | 27,0 | 123,0 | 26,0 | 111,0 | 25,0 |
| | 18 | 124,0 | 29,0 | 117,0 | 29,0 | 112,0 | 28,0 | 101,0 | 27,0 |
| | 20 | 117,0 | 30,0 | 110,0 | 30,0 | 105,0 | 29,0 | 95,0 | 29,0 |
| | 22 | 109,0 | 32,0 | 102,0 | 32,0 | 98,0 | 31,0 | 89,0 | 30,0 |
| | 24 | 101,0 | 33,0 | 95,0 | 33,0 | 91,0 | 32,0 | 82,0 | 32,0 |

 = zulässige Fußbodentemperatur für Aufenthaltszonen ($\leq 29 \text{ °C}$)
 = zulässige Fußbodentemperatur für Randzonen ($\leq 35 \text{ °C}$)
 = über max. zulässiger Fußbodentemperatur von 35 °C

| | |
|---|-------|
| Maximal zulässige Oberflächentemperaturen | |
| Fußbodentemperatur Aufenthaltszonen | 29 °C |
| Fußbodentemperatur Badezimmer | 33 °C |
| Fußbodentemperatur Randzonen | 35 °C |
| Wandheizung | 40 °C |

Diese Tabellen dienen als Richtlinie für die Wärmeabgabe bei der Montage einer herkömmlichen Fussbodenheizung (nach DIN4725). Für das Einfräsen einer Fussbodenheizung stehen solche Tabellen noch nicht zur Verfügung. Aufgrund unserer Erfahrung und Untersuchungen können wir aber feststellen, dass die Wärmeabgabe beim Einfräsen mindestens diesen Werten entspricht.

WÄRMEABGABETABELLE

DICKEN TEPPICHBELAG UND HOLZFUSSBODEN

WÄRMEWIDERSTAND $R_{\lambda} = 0,15 \text{ m}^2 \text{ K/W}$

| Durchschnittliche Wassertemperatur in °C | | Entwurfsraum Temperatur in °C | | Verlegeabstand Heizrohr | | | | | | | |
|--|----|-------------------------------|-------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|-------------------------------------|-----------------------------|
| | | | | 10 cm | | 12,5 cm | | 15 cm | | 20 cm | |
| | | | | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C | Wärme Abgabe in Watt/M ² | Oberfläche Temperatur in °C |
| 30 | 15 | 48,0 | 20,0 | 46,0 | 20,0 | 44,0 | 19,0 | 40,0 | 19,0 | | |
| | 18 | 39,0 | 22,0 | 37,0 | 22,0 | 35,0 | 22,0 | 32,0 | 21,0 | | |
| | 20 | 32,0 | 23,0 | 31,0 | 23,0 | 30,0 | 23,0 | 27,0 | 23,0 | | |
| | 22 | 26,0 | 25,0 | 25,0 | 25,0 | 24,0 | 24,0 | 22,0 | 24,0 | | |
| | 24 | 19,0 | 26,0 | 18,0 | 26,0 | 18,0 | 26,0 | 16,0 | 26,0 | | |
| 35 | 15 | 65,0 | 21,0 | 61,0 | 21,0 | 59,0 | 21,0 | 54,0 | 20,0 | | |
| | 18 | 55,0 | 23,0 | 52,0 | 23,0 | 50,0 | 23,0 | 46,0 | 22,0 | | |
| | 20 | 48,0 | 25,0 | 46,0 | 25,0 | 44,0 | 24,0 | 40,0 | 24,0 | | |
| | 22 | 42,0 | 26,0 | 40,0 | 26,0 | 38,0 | 26,0 | 35,0 | 26,0 | | |
| | 24 | 36,0 | 28,0 | 34,0 | 28,0 | 32,0 | 27,0 | 30,0 | 27,0 | | |
| 40 | 15 | 81,0 | 22,0 | 77,0 | 22,0 | 74,0 | 22,0 | 67,0 | 21,0 | | |
| | 18 | 71,0 | 25,0 | 67,0 | 25,0 | 65,0 | 24,0 | 59,0 | 24,0 | | |
| | 20 | 65,0 | 26,0 | 61,0 | 26,0 | 59,0 | 26,0 | 54,0 | 25,0 | | |
| | 22 | 58,0 | 28,0 | 55,0 | 28,0 | 53,0 | 27,0 | 49,0 | 27,0 | | |
| | 24 | 52,0 | 29,0 | 49,0 | 29,0 | 47,0 | 29,0 | 43,0 | 28,0 | | |
| 45 | 15 | 97,0 | 24,0 | 92,0 | 24,0 | 88,0 | 23,0 | 81,0 | 22,0 | | |
| | 18 | 87,0 | 26,0 | 83,0 | 26,0 | 80,0 | 25,0 | 73,0 | 25,0 | | |
| | 20 | 81,0 | 27,0 | 77,0 | 27,0 | 74,0 | 27,0 | 67,0 | 26,0 | | |
| | 22 | 74,0 | 29,0 | 70,0 | 29,0 | 68,0 | 28,0 | 62,0 | 28,0 | | |
| | 24 | 68,0 | 30,0 | 64,0 | 30,0 | 62,0 | 30,0 | 57,0 | 29,0 | | |
| 50 | 15 | 113,0 | 25,0 | 107,0 | 25,0 | 103,0 | 24,0 | 94,0 | 24,0 | | |
| | 18 | 103,0 | 27,0 | 98,0 | 27,0 | 94,0 | 27,0 | 86,0 | 26,0 | | |
| | 20 | 97,0 | 29,0 | 92,0 | 29,0 | 88,0 | 28,0 | 81,0 | 27,0 | | |
| | 22 | 90,0 | 30,0 | 86,0 | 30,0 | 83,0 | 30,0 | 76,0 | 29,0 | | |
| | 24 | 84,0 | 32,0 | 80,0 | 32,0 | 77,0 | 31,0 | 70,0 | 31,0 | | |

| | |
|---|--|
|  | = zulässige Fußbodentemperatur für Aufenthaltszonen ($\leq 29 \text{ °C}$) |
|  | = zulässige Fußbodentemperatur für Randzonen ($\leq 35 \text{ °C}$) |
|  | = über max. zulässiger Fußbodentemperatur von 35 °C |

Maximal zulässige Oberflächentemperaturen

| | |
|-------------------------------------|-------|
| Fußbodentemperatur Aufenthaltszonen | 29 °C |
| Fußbodentemperatur Badezimmer | 33 °C |
| Fußbodentemperatur Randzonen | 35 °C |
| Wandheizung | 40 °C |

Diese Tabellen dienen als Richtlinie für die Wärmeabgabe bei der Montage einer herkömmlichen Fussbodenheizung (nach DIN4725). Für das Einfräsen einer Fussbodenheizung stehen solche Tabellen noch nicht zur Verfügung. Aufgrund unserer Erfahrung und Untersuchungen können wir aber feststellen, dass die Wärmeabgabe beim Einfräsen mindestens diesen Werten entspricht.