

Anchor JT2 Carbon steel fasteners with a diameter of 5,5 mm
 Calculation guidance for SBH-T washer using HTK 50 15 as a comparison. (guidance only)
 Correction according EN ISO 6946 D.3

The effect of mechanical fixings should be included in the U-value unless they lead to an adjustment in the U-value of less than 3%.
 $U = 1 / RT + \Delta U_f$ (if ΔU_f is not less than 3% of $1 / RT$)
 $U = 1 / RT$ (if ΔU_f is less than 3% of $1 / RT$)

$$\Delta U_f = \alpha \frac{\lambda_f A_f n_f}{d_0} \left(\frac{R_1}{R_{T,h}} \right)^2$$

ISO 6946 D.5

Component	JT2-D6 5.5/6.3
d1 (screw)	25 mm
α	0.17
λ_f	45 W/m·K
dsi	0 mm
dso	5.5
Af	2.37583E-05 m ²
nf	4
do	0.12 m
R1	3.428571429 m ² ·K / W
RT,h	3.428571429 m ² ·K / W

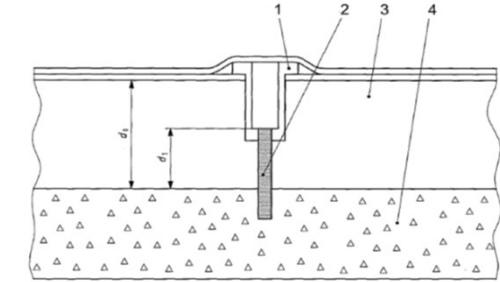
(Carbon steel: 45 ; stainless steel: 15 ; plastic: 0.5)
 inner diameter of fastener
 outer diameter of fastener
 $A_f = (d_{so}^2 - d_{si}^2) \cdot \pi / 4$
 number of fasteners / m²
 thickness of insulation
 Resistance of insulation = 1/U
 Resistance of all Components without fastener

ΔU_f (fastener) 0.005939574 W / m² · K
 χ (in the past v) 0.001484893 W/K

$$\Delta U_f = n_f \chi$$

Component	HTK 50/15
HTK length	15 mm
α	0.63
λ_f	0.5 W/m·K
dsi	9 mm
dso	12
Af	4.948E-05 m ²
nf	4
do	0.12 m
R1	3.42857143 m ² ·K / W
RT,h	3.42857143 m ² ·K / W

ΔU_f (HTK) 0.00052229 W / m² · K
 χ (in the past) 0.00013057 W/K



$$\Delta U_f = n_f \chi$$

thickness of insulat	number of fasteners	ΔU_f (fastener)	thickness of ir	number of fas	ΔU_f (fastener)
d0 [mm]		W / m ² · K	d0 [mm]		W / m ² · K
40	1	0.0045	40	2	0.0089
50	1	0.0036	50	2	0.0071
60	1	0.0030	60	2	0.0059
70	1	0.0025	70	2	0.0051
80	1	0.0022	80	2	0.0045
90	1	0.0020	90	2	0.0040
100	1	0.0018	100	2	0.0036
110	1	0.0016	110	2	0.0032
120	1	0.0015	120	2	0.0030
130	1	0.0014	130	2	0.0027
140	1	0.0013	140	2	0.0025
150	1	0.0012	150	2	0.0024
160	1	0.0011	160	2	0.0022
170	1	0.0010	170	2	0.0021
180	1	0.0010	180	2	0.0020
190	1	0.0009	190	2	0.0019
200	1	0.0009	200	2	0.0018
210	1	0.0008	210	2	0.0017
220	1	0.0008	220	2	0.0016
230	1	0.0008	230	2	0.0015
240	1	0.0007	240	2	0.0015
250	1	0.0007	250	2	0.0014
260	1	0.0007	260	2	0.0014
270	1	0.0007	270	2	0.0013
280	1	0.0006	280	2	0.0013
290	1	0.0006	290	2	0.0012
300	1	0.0006	300	2	0.0012

