



BU-035

Tolerances of eltherm ready to use heated hoses

Pos. 1 length of heated hoses

The length of the heated hoses mentioned in our correspondence comprises:

1. for heated hoses with fittings:
the heated length of the hose and the fittings.
2. for heated hoses without fittings:
the heated length of the hose and the end caps
the length of the protruding inside tube is not included

Basic temperature for the tolerances is + 24 °C, w/o inside pressure

Admissible deviations of dimension L₁ for factory mounted heating hoses.
The manufacturing tolerances correspond to DIN 20066:

length L ₁ (mm)	tolerances acc.to DIN 20066 up to I/D 25 (mm)	tolerances acc.to DIN 20066 I/D 32 through I/D 50 (mm)	tolerances acc.to DIN 20066 I/D 60 through I/D 100 (mm)
up to 630	+7 / -3	+12 / -4	+25 / -6
630 through 1250	+12 / -4	+20 / -6	
1250 through 2500	+20 / -6	+25 / -6	
2500 through 8000	+1,5% / -0,5%		
over 8000	+3% / -1%		

Pos. 2 Inside diameter / wall thickness of heated hoses

2.1 PTFE industrial hoses

inside diameter (mm)	tolerance (mm)	wall thickness (mm)	tolerance (mm)
1,0 -- 5,0	+/- 0,20	0,10 -- 0,30	+/- 0,05
5,1 -- 7,0	+/- 0,25	0,31 -- 0,60	+/- 0,10
7,1 -- 10,0	+/- 0,30	0,61 -- 1,00	+/- 0,15
10,1 -- 15,0	+/- 0,35	1,01 -- 2,00	+/- 0,20
15,1 -- 20,0	+/- 0,40	2,01 -- 3,00	+/- 0,40
20,1 -- 30,0	+/- 0,50		
30,1 -- 40,0	+/- 0,60		

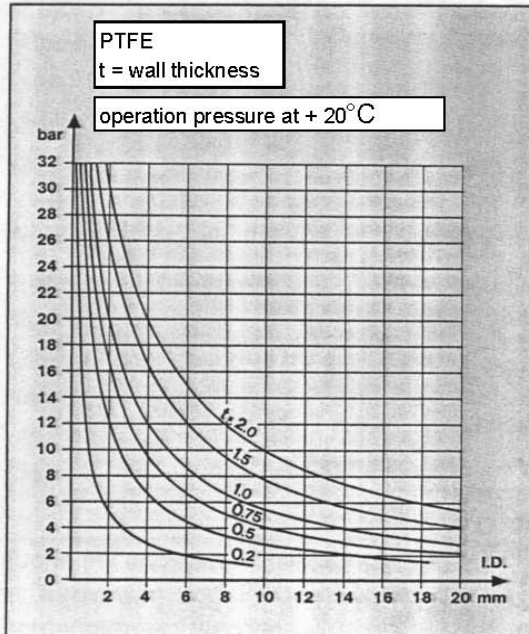
2.2 stainless steel pipes

standard tolerances of the outside Ø (mm) up to 10 mm	+/- 0,13 mm
tolerances of wall thickness:	+/- 10%



Pos. 3 max. pressure of plain PTFE industrial hoses

pressure stress



The graph shows how to calculate the recommended op. pressure (about 0.25 times shorttime burst pressure) for plain PTFE hoses.

For working temperatures over + 20°C please multiply the pressure shown in the graph by the following factors:

temp. °C	factor
50	0,87
75	0,77
100	0,68
150	0,53
200	0,39
250	0,28

For temperatures under +20 °C no factors are required.

Pressure indications for stainless steel braiding PTFE – standard hoses

Hose type	DN	4	6	8	101	3	16	20	25
max. operating pressure md	bar	275	240	200	175	150	135	100	80
max. operating pressure hd	bar	/	275	250	225	200	175	150	130
max. operating pressure shd	bar	/	500	475	475	450	363	275	225

Operating pressure valid for operating temperatures in the range of +20°C to +50°C

Temperature coefficient of correction ELH/md/hd,shd

100°C	150°C	200°C	250°C
0,98	0,9	0,83	0,6

Pos. 4 Wattage tolerances

Wattage (W)	tolerances	Values acc. to VDE
≤ 200	+/- 10 %	
> 200	+ 5 / - 10 %	

Pos. 5 Voltage tolerances

nominal voltage	+/- 10 %	Values acc. to VDE
-----------------	----------	--------------------

Pos. 6 Temperature tolerances

The following parameters influence the tolerances:

1. Accuracy and tolerances of controller.
2. The length and cross-section of extension wires (thermo couples).
3. Length and cross-section of conn. cables of PT-100 (RTD) temp. sensors.
4. Material and resistance of terminals.
5. Temperature drops in the heated hose in the facility of the un-insulated and unheated fittings.
This temperature drop depends on the ambient temperature.
It can be prevented by heated and insulated fittings