

Sizing of condensate lines

State of the condensate

before flashing

Pressure Related boiling

bara temperature

absolute °C

Pressure at the end of the condensate line [bar absolute]

	0.2	0.5	0.8	1.0	1.2	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6	7	8	9	10	12	15	18	20
1.0	99	35.7	16.0	7.4																		
1.2	104	37.9	18.0	10.0	6.1																	
1.5	111	40.1	20.6	12.9	9.5	6.8																
2.0	120	44.2	23.5	15.8	12.6	10.3	7.6															
2.5	127	46.8	25.5	17.7	14.5	12.3	9.2	5.3														
3.0	133	48.8	27.1	19.2	16.0	13.9	10.7	7.3	4.5													
3.5	138	50.4	28.4	20.4	17.1	15.0	11.9	8.5	6.0	3.8												
4.0	143	52.0	29.6	21.5	18.2	18.0	12.9	9.7	7.3	5.3	3.5											
4.5	147	53.3	30.5	22.3	19.0	16.9	13.7	10.5	8.1	6.3	4.7	3.0										
5.0	151	54.3	31.5	23.1	19.8	17.7	14.4	11.2	8.9	7.1	5.6	4.2	2.8									
6.0	155	55.7	32.3	23.9	20.5	18.4	15.2	11.9	9.6	7.9	6.5	5.1	4.0	2.7								
7.0	158	56.5	33.0	24.5	21.1	18.9	15.7	12.4	10.1	8.4	7.0	5.7	4.6	3.5	2.1							
8.0	170	59.9	35.5	26.7	23.1	20.9	17.6	14.2	11.9	10.2	8.9	7.7	6.7	5.8	4.8	4.0						
9.0	175	61.3	36.4	27.5	23.9	21.7	18.3	14.9	12.6	10.9	9.5	8.4	7.4	6.6	5.5	4.8	2.4					
10.0	179	62.3	37.2	28.2	24.6	22.3	18.9	15.5	13.1	11.4	10.0	8.9	7.9	7.1	6.0	5.3	3.3	2.1				
12.0	187	64.4	38.7	29.5	25.7	23.5	19.9	16.5	14.1	12.3	11.0	9.8	8.9	8.0	7.0	6.2	4.5	3.6	2.8			
15.0	197	66.9	40.5	31.0	27.2	24.8	21.5	17.7	15.2	13.4	12.0	10.8	9.9	9.1	8.0	7.2	5.6	4.8	4.2	2.9		
18.0	206	69.0	42.0	32.3	28.4	26.0	22.3	18.7	16.2	14.3	12.9	11.7	10.8	9.9	8.8	8.0	6.5	5.7	5.1	3.9	2.5	
20.0	211	70.2	42.9	33.0	29.0	26.6	22.9	19.2	16.7	14.8	13.4	12.2	11.2	10.4	9.2	8.4	7.0	6.2	5.6	4.4	3.1	1.7
25.0	223	72.9	44.8	34.7	30.6	28.1	24.2	20.4	17.9	15.9	14.5	13.2	12.2	11.4	10.2	9.3	7.9	7.1	6.5	5.4	4.2	3.1
30.0	233	75.1	46.3	36.0	31.8	29.2	25.3	21.4	18.8	16.8	15.3	14.0	13.0	12.1	10.9	10.0	8.6	7.8	7.2	6.1	4.9	4.0
35.0	241	76.8	47.5	37.0	32.7	30.1	26.1	22.1	19.5	17.5	15.9	14.6	13.6	12.7	11.4	10.5	9.2	8.4	7.8	6.7	5.5	4.5
40.0	249	78.5	48.7	38.0	33.6	31.0	26.9	22.9	20.1	18.1	16.5	15.2	14.1	13.2	12.0	11.0	9.7	8.6	8.2	7.1	6.0	5.0
45.0	256	80.0	49.7	38.8	34.4	31.7	27.5	23.5	20.7	18.6	17.0	15.7	14.6	13.7	12.4	11.4	10.1	9.3	8.6	7.5	6.3	5.4
50.0	263	81.4	50.7	39.6	35.2	32.5	28.2	24.1	21.2	19.1	17.5	16.2	15.1	14.2	12.8	11.8	10.5	9.6	9.0	7.9	6.7	5.7

To determine the actual diameter (mm), the above values must be multiplied with the following factors:

kg/h	100	200	300	400	500	600	700	800	900	1,000	1,500	2,000	3,000	5,000	8,000	10,000	15,000	20,000
Factor	1.0	1.4	1.7	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.9	4.5	5.5	7.1	8.9	10.0	12.2	14.1

Example :

Steam pressure 9 Barg = (9+1) = 10 Bara. with back pressure 2 Barg = (2+1) = 3 Bara. Read from table = 11.4

for Condensate flow rate 1,500 Kg/h. Read the factor =3.9

Condensate pipe diameter = 11.4 x 3.9 = 44.46 Then, we use DN50