



HVAC ACCESSORIES

MINNESOTA

FLEXIBLE CORPORATION

803 Transfer Road · St. Paul, MN 55114 · Phone 651.645.7522 · Fax 651.645.8259 · Toll Free 800.351.9069

As the service temperature increases, the maximum pressure a hose assembly can withstand decreases. The material from which the hose is made and the method of fitting attachment (mechanical, soldered, welded, silver brazed) determine the maximum pressure at which an assembly can be used. By using the factors given in the chart below, the approximate safe working pressure at elevated temperatures can be calculated for assemblies with welded or mechanically attached fittings.

Temperature Correction Factors						
Temp (°F)	304,316L Stainless	321 Stainless	Bronze	Monel	Hastelloy	Inconel
Room	1.00	1.00	1.00	1.00	1.00	1.00
150	.96	.97	.92	.93	.97	.99
200	.92	.94	.89	.90	.94	.98
250	.91	.92	.86	.87	.92	.97
300	.86	.88	.83	.83	.91	.97
350	.85	.86	.81	.82	.89	.96
400	.82	.83	.78	.79	.87	.95
450	.80	.81	.75	.77	.86	.94
500	.77	.78	—	.73	.85	.94
600	.73	.74	—	.72	.84	.92
700	.69	.70	—	.71	.82	.90
800	.64	.66	—	.70	.81	.89
900	—	.62	—	—	.79	.87
1000	—	.60	—	—	.78	.86
1100	—	.58	—	—	.75	.84
1200	—	.55	—	—	.73	.82
1300	—	.50	—	—	.69	.79
1400	—	.44	—	—	.65	.77
1500	—	.40	—	—	—	.74

Example

Determine if 3/4" annular stainless hose with welded fittings is satisfactory for the given operating conditions.

Given:

Maximum operating temperature is 700° F.
Maximum operating pressure is 200 PSIG.

Computation:

Nominal rated burst pressure for 3/4" with welded fittings is 3200 PSIG.

From Temperature Correction Factors Chart – factor for stainless at 700° F is .70

Rated Burst Pressure: 3200 PSIG x .70 = 2240 PSIG (rated burst pressure at 700° F)

Safe Operating Pressure: 2240 ÷ 4 = 560 PSIG (using 4:1 safety factor)

Result:

Since the maximum operating pressure at 700° F is 560 PSIG the hose will meet the required operating conditions outlined above.

Saturated Steam Pressure To Temperature (Hg)

Saturated Steam Vacuum (in. of Hg)	Temp (°F)
—	0
29.84	20
29.74	32
29.67	40
29.39	60
28.89	80
27.99	100
26.48	120
24.04	140
20.27	160
15.20	180
6.46	200

Saturated Steam Pressure To Temperature (PSIG)

Saturated Steam (PSIG)	Temp (°F)
0	212
10	238
20	259
30	274
40	287
50	298
60	307
75	320
80	324
90	331
100	338
125	353
150	366
175	377
200	388
225	397
250	406
275	414
300	422
325	429
350	436
375	442
400	448
425	454
450	460
475	465
500	470
550	480
600	489
700	505
800	520
900	534
1000	546
1250	574
1500	606
2500	669

TEMPERATURE CORRECTION FACTORS