POWERING GLOBAL INDUSTRY

STEAM HOSE

STEAM HOSE SAFETY RECOMMENDATIONS

Reprinted from ARPM-11-1 Steam Hose

Handling steam is a very hazardous situation. Using care and some safety precaution can minimize or eliminate personal or property damage.

SELECTING AND USING STEAM HOSE

1. Make sure steam hose is identified as a steam hose. It should be branded as such, stating working pressure and temperature rating.
2. Make sure working pressure and temperature is not exceeded.
3. Do not allow hose to remain under pressure when not in use.
4. Avoid excess bending or flexing of hose near the coupling. Straight line operation is preferred. If bends are necessary as a part of operation, spring guards may help.
5. Be sure and use recommended steam hose couplings and clamps on hose.

MAINTENANCE OF STEAM HOSE

1. Periodic inspection of hose should include looking for cover blisters and lumps.
2. Check for kinked areas that could damage hose.
3. Drain hose after each use to avoid tube damage before hose is put back in operation, to avoid "popcorning" of the tube.
4. Check tightness of clamps and bolts after each use.
5. Check to see if clamp halves are touching. If they are, recouple hose with smaller clamps to ensure proper tightness or grip around hose.
6. Do not store hose over hooks.
7. Steam hose laying on metal racks or installed around steel piping will dry out the hose, causing tube and cover cracking.

CORROSIVE STEAM

When the water used to generate steam contains dissolved air, oxygen or carbon dioxide, then these gases end up as contaminants in the steam. At high temperatures of steam, both oxygen and carbon dioxide are extremely corrosive.

Carbon dioxide is acidic and therefore attacks metals, whereas the oxygen corrodes metals and oxidizes rubbers. Corrosion of metals in the presence of both oxygen and acids is forty times faster than with either alone. Boiler water is therefore normally treated not only to remove the "hardness," which could cause "furring" of the boiler, but also to remove dissolved oxygen and carbon dioxide and to ensure that the steam is not only non-acidic, but even slightly alkaline. Boiler water treatment is a specialized subject beyond the scope of this technical sheet, but correct steam generation is important.

DETERIORATION OF STEAM HOSE

Like all rubber products, steam hoses have a finite life and are subject to gradual deterioration with use. However, it sometimes happens that hoses which have been giving a good life suddenly start failing without apparent reason. In such cases, it is often a change in the steam conditions causing a rapid acceleration of a normal failure mode. It is therefore useful to consider how steam hoses normally last and thus how the condition of the steam affects hose life

SELECTING AND USING STEAM HOSE

GAUGE PRESSURE PSI	GAUGE PRESSURE BAR	TEMPERATURE °C	TEMPERATURE °F
25	1.73	130	267
30	2.07	134	274
35	2.42	138	281
40	2.76	141	287
45	3.11	144	292
50	3.45	148	298
60	4.14	153	307
70	4.83	158	316
80	5.52	162	324
90	6.21	166	330
100	6.90	170	338
120	8.28	177	350
140	9.66	182	361
160	11.04	188	371
180	12.42	193	379
200	13.80	198	388
225	15.53	203	397
250	17.25	208	406
275	18.98	212	414
300	20.70	216	422
325	22.43	221	429
350	24.15	225	437

The chart represents the three forms of water when subjected to heat and pressure. Use only hoses specifically designed for the application.

GAUGE PRESSURE PSI	TEMPERATURE OF SATURATED STEAM (°F)
10	239
25	267
50	298
75	320
100	338
125	353
150	366
175	377
200	388
225	397
250	406