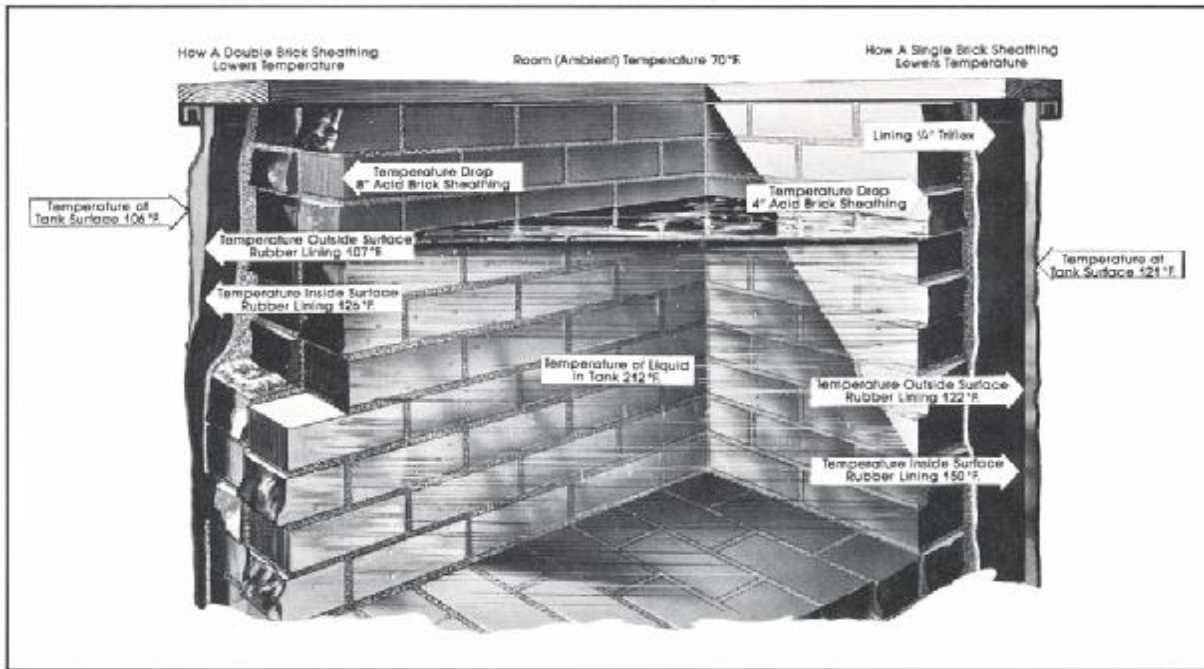


EFFECTS OF BRICK LINING AT ELEVATED TEMPERATURE



EFFECT OF TEMPERATURE ON RUBBER LINING

Recommended maximum service temperature for rubber lining is normally 180°F. However, Polycorp Protective Linings are not necessarily limited to this temperature. Where necessary, a lining can be installed to withstand temperatures up to 240°F. Increasing the temperature will usually increase chemical oxidation and diffusion of chemicals through the lining.

Excessive Temperatures: For high temperature service, brick sheathing between the rubber lining and acid will reduce the actual temperature at the lining. The cost of the sheathing is offset by the extended service life of the tank. The brick sheathing also provides physical and heat protection for the lining. In a pickling tank for example, the brick insulates the lining and protects it from possible gouging by the metal.

Appendix II: Effect of Brick on Rubber Lining

Explanation of the Chart: The figures (below) are based on a 3/8” steel tank with 1/4” rubber lining and free circulation of air on the outside. The figures have been obtained largely by calculation, but enough checks have been run at various times to provide adequate correlation between calculated temperatures and those found in actual installation tests in the liquid temperature range of 200 through 250°F. Figures for liquid temperatures above 250°F are entirely calculated.

Liquid temp °F	Room temp °F	Brick thick-ness	Temp at interface F	
			Brick-rubber	Rubber-steel
200	80	4"	146	123
	90		150	130
	100		155	136
230	80	4"	162	134
		8"	139	117
	90	4"	167	140
		8"	144	124
	100	4"	172	147
		8"	149	131
250	80	4"	173	141
		8"	146	120
		12"	132	112
	90	4"	178	148
		8"	151	130
		12"	136	119
	100	4"	182	154
		8"	157	137
		12"	142	127
300	80	8"	166	136
		12"	143	121
	90	8"	172	144
		12"	150	129
	100	8"	178	151
		12"	158	137
350	90	12"	176	152
	100	12"	183	159
450	90	12"	210	176
	100	12"	216	186
500	90	12"	226	188
	100	12"	233	196

Figures are based on using ceramic brick. Not applicable if carbon brick is used.