

Poly Processing Company
 Thickness Requirements for Rotationally Molded Vertical Tanks
 Calculation Spreadsheet for 100 deg. F Service

Tank: 10500 Gallon Inner Safe Tank
 Date: 03/26/25

OD = 132 in SD = 600 psi
 SL = 185.25 in

I. Top Head Design Thickness, t TH (inches)

SG:	1.35		1.65		1.90		2.20	
	Design Thickness	Lower Limit	Design Thickness	Lower Limit	Design Thickness	Lower Limit	Design Thickness	Lower Limit
	0.44	0.35	0.44	0.35	0.44	0.35	0.44	0.35

II. Cylindrical Shell Design Thickness, t CS (inches)

SG:	1.35		1.65		1.90		2.20	
E	Design Thickness	Lower Limit	Design Thickness	Lower Limit	Design Thickness	Lower Limit	Design Thickness	Lower Limit
180	0.44	0.35	0.44	0.35	0.44	0.35	0.44	0.35
168	0.44	0.35	0.44	0.35	0.44	0.35	0.44	0.35
156	0.44	0.35	0.44	0.35	0.44	0.35	0.44	0.35
144	0.44	0.35	0.44	0.35	0.44	0.35	0.44	0.35
132	0.44	0.35	0.44	0.35	0.44	0.35	0.47	0.37
120	0.44	0.35	0.44	0.35	0.49	0.39	0.57	0.46
108	0.44	0.35	0.51	0.41	0.58	0.47	0.68	0.54
96	0.48	0.38	0.58	0.47	0.67	0.54	0.78	0.62
84	0.54	0.43	0.66	0.53	0.76	0.61	0.88	0.71
72	0.61	0.49	0.74	0.59	0.85	0.68	0.99	0.79
60	0.67	0.54	0.82	0.66	0.95	0.76	1.09	0.88
48	0.74	0.59	0.90	0.72	1.04	0.83	1.20	0.96
36	0.80	0.64	0.98	0.78	1.13	0.90	1.30	1.04
24	0.86	0.69	1.06	0.85	1.22	0.97	1.41	1.13
12	0.93	0.74	1.14	0.91	1.31	1.05	1.51	1.21
0	0.99	0.79	1.21	0.97	1.40	1.12	1.62	1.30

III. Lower Knuckle Design Thickness, t LK (inches)

SG:	1.35		1.65		1.90		2.20	
	Design Thickness	Lower Limit	Design Thickness	Lower Limit	Design Thickness	Lower Limit	Design Thickness	Lower Limit
	0.99	0.79	1.21	0.97	1.40	1.12	1.62	1.30

IV. Bottom Plate Design Thickness, t BP (inches)

SG:	1.35		1.65		1.90		2.20	
r	Design Thickness	Lower Limit	Design Thickness	Lower Limit	Design Thickness	Lower Limit	Design Thickness	Lower Limit
60	0.94	0.75	1.14	0.92	1.31	1.05	1.51	1.21
48	0.84	0.67	1.00	0.80	1.14	0.91	1.30	1.04
36	0.74	0.59	0.86	0.69	0.96	0.77	1.08	0.87
24	0.64	0.51	0.72	0.58	0.79	0.63	0.87	0.69
12	0.54	0.43	0.58	0.46	0.61	0.49	0.65	0.52
0	0.44	0.35	0.44	0.35	0.44	0.35	0.44	0.35