

VENEZUELA SPRING / FALL

Heat Loss without Calcium insulation , 1 1/2" thick up to 450°F and 3" thick above 450° F for an ambient temperature of 68° (Spring/fall), wind of 1 mph in Btu/ft/hr

Process Temperature (F°)

Pipe Size (Inches)	150	250	350	450	550	650	750	850
2 w/insul.	19.37	45.37	74.15	105.9	96.02	121.9	150	180.4
Envirocage	137.3	347.2	613.6	949.5	1371	1896	2545	3340
3 w/insul.	25.44	59.65	97.54	139.3	121.6	154.3	189.9	228.5
Envirocage	183.3	473.1	847.5	1325	1928	2683	3619	4767
4 w/insul.	30.53	71.62	117.2	167.4	140.8	178.7	220	264.7
Envirocage	233.1	583.5	1054	1657	2421	3380	4572	6036
6 w/insul.	43.03	101.1	165.5	236.8	187.6	238.2	293.3	353
Envirocage	305.9	816.2	1490	2359	3465	4857	6589	8719
8 w/insul.	51.66	121.4	199	284.8	221.5	281.3	346.3	416.9
Envirocage	382.9	1034	1900	3018	4444	6241	8478	11230
10 w/insul.	60.37	142	232.8	333.3	266.5	338.6	417	502
Envirocage	464.5	1266	2334	3717	5482	7707	10480	13890
12 w/insul.	70.08	165	270.7	387.6	306.1	388.9	479	576.7
Envirocage	541.3	1484	2743	4376	6462	9092	12370	16400
14 w/insul.	81	190.9	313.5	449.3	341.2	433.6	534.1	643.2
Envirocage	589.3	1621	2999	4787	7073	9956	13550	17970
16 w/insul.	90.56	213.6	350.9	503	381.5	484.8	597.3	716.3
Envirocage	666	1839	3408	5446	8051	11340	15440	20490

VENEZUELA SPRING / FALL

Heat Loss without Calcium insulation , 40mm thick up to 232.2°C and 80mm thick above 232.2°C for an ambient temperature of 20° (Spring/fall), wind of .4 m/s in Heat Loss W/m

Process Temperature (C°)

Pipe Size (Millimeters)	65.6	121.1	176.7	232.2	287.8	343.3	398.9	454.4
50 w/insul.	18.59	43.52	71.16	101.6	92.25	117.1	144.1	173.3
Envirocage	128.3	326.6	580.1	900.3	1304	1806	2428	3190
80 w/insul.	24.42	57.2	93.59	133.7	116.8	148.2	182.5	219.5
Envirocage	172.2	447.2	805	1261	1839	2563	3461	4563
100 w/insul.	29.3	68.68	112.4	160.6	135.2	171.6	211.3	254.3
Envirocage	210.2	553.3	1004	1581	2314	3234	4379	5784
150 w/insul.	41.28	96.92	158.9	227.3	180.2	228.8	281.8	339.2
Envirocage	289.7	777.3	1424	2257	3320	4655	6321	8365
200 w/insul.	49.57	116.5	191	273.4	212.8	270.2	332.8	400.6
Envirocage	363.9	987.6	1819	2892	4263	5988	8139	10780
250 w/insul.	57.94	136.2	223.6	320	256.1	325.3	400.7	482.4
Envirocage	442.5	1211	2237	3565	5262	7398	10060	13340
300 w/insul.	67.26	158.3	259.9	372.2	294.1	373.6	460.3	554.2
Envirocage	516.6	1421	2631	4199	6204	8730	11880	15760
350 w/insul.	77.74	183.2	301.1	431.4	327.9	416.6	513.3	618.1
Envirocage	562.8	1552	2877	4594	6792	9561	13020	17270
400 w/insul.	86.93	205	337.1	483.1	366.6	465.9	574.1	691.3
Envirocage	636.9	1762	3271	5228	7734	10890	14840	19680

VENEZUELA SUMMER

Heat Loss without Calcium insulation , 1 1/2" thick up to 450°F and 3" thick above 450° F for an ambient temperature of 90° (Summer), wind of 1 mph in Btu/ft/hr

Process Temperature (F°)

Pipe Size (Inches)	150	250	350	450	550	650	750	850
2 w/insul.	14.36	35.48	69.24	101	92.67	118.5	146.7	177.1
Envirocage	101.7	260.9	574	908.6	1329	1853	2502	3296
3 w/insul.	18.88	53.15	91.1	132.9	178.8	150.1	185.7	224.4
Envirocage	135.6	421.2	792.6	1268	1869	2622	3557	4705
4 w/insul.	22.66	63.83	109.4	159.8	135.9	173.8	215.1	259.9
Envirocage	164.7	519	985.1	1585	2347	3304	4495	5958
6 w/insul.	31.96	90.11	154.7	226	181.1	231.8	286.9	346.7
Envirocage	224.9	724.9	1392	2256	3359	4748	6478	8607
8 w/insul.	38.37	108.3	186	271.8	213.8	273.7	338.8	409.4
Envirocage	280.6	917.7	1774	2886	4308	6101	8336	11090
10 w/insul.	44.85	126.6	217.6	318.1	257.4	329.5	407.9	493
Envirocage	339.5	1122	2179	3554	5314	7535	10300	13710
12 w/insul.	52.06	147.1	252.9	370	295.5	378.4	468.5	566.3
Envirocage	394.7	1315	2561	4184	6263	8889	12160	16190
14 w/insul.	60.19	170.3	293	428.9	329.5	421.9	522.5	631.7
Envirocage	429.3	1436	2799	4577	6855	9733	13320	17740
16 w/insul.	67.29	190.5	328	480.2	368.4	471.8	584.4	706.5
Envirocage	484.5	1628	3181	5207	7804	11090	15180	20230

VENEZUELA SUMMER

Heat Loss without Calcium insulation , 40mm thick up to 232.2°C and 80mm thick above 232.2°C for an ambient temperature of 32.2° (Summer), wind of .4 m/s in Heat Loss W/m

Process Temperature (C°)

Pipe Size (Millimeters)	65.6	121.1	176.7	232.2	287.8	343.3	398.9	454.4
50 w/insul.	13.87	38.95	66.75	97.31	89.24	114.1	141.2	11.6
Envirocage	95.11	291	542.6	861.4	1264	1765	2387	1519
80 w/insul.	18.24	51.25	87.88	126.2	113	114.6	178.9	216.1
Envirocage	127.3	398	752.6	1207	1783	2505	3403	4503
100 w/insul.	21.9	61.58	105.6	154.1	130.9	167.4	207.3	250.3
Envirocage	155.1	491.9	937.9	1512	2243	3161	4305	5708
150 w/insul.	30.92	87.04	149.5	218.3	174.6	223.4	276.5	334.1
Envirocage	212.8	690	1330	2159	3218	4551	6214	8257
200 w/insul.	37.15	104.6	179.8	262.6	206.1	263.7	326.6	394.5
Envirocage	266.4	875.8	1698	2765	4132	5853	8002	394.5
250 w/insul.	43.44	122.4	210.4	307.5	248.2	317.6	393.3	475.3
Envirocage	323	1073	2088	3408	5100	7232	9895	10640
300 w/insul.	50.45	142.3	244.7	357.7	285.1	364.8	451.8	546
Envirocage	376.4	1259	2456	4014	6014	8534	11680	15550
350 w/insul.	58.36	164.8	283.6	414.9	317.9	406.9	504	609.1
Envirocage	409.7	1375	4686	4393	9584	9347	12800	17040
400 w/insul.	409.7	184.4	317.6	464.7	355.5	455.1	563.7	681.3
Envirocage	462.9	1560	3053	4998	7496	10650	14590	19430

VENEZUELA WINTER

Heat Loss without Calcium insulation , 1 1/2" thick up to 450°F and 3" thick above 450°F for an ambient temperature of 40° (Winter), wind of 1 mph in Btu/ft/hr

Process Temperature (F°)

Pipe Size (Inches)	150	250	350	450	550	650	750	850
2 w/insul.	25.54	51.5	80.23	111.9	100.2	126	154.1	184.5
Envirocage	181.6	394.4	662.9	1000	1423	1949	2599	3395
3 w/insul.	33.54	67.67	105.5	147.2	126.8	159	195	233.7
Envirocage	243.2	538.1	916.2	1396	2001	2758	3695	4845
4 w/insul.	40.23	81.24	126.7	176.9	232	184.7	226	270.7
Envirocage	296.6	664.4	1140	1746	2514	3475	4668	6133
6 w/insul.	56.67	114.6	179	250.1	195.6	246.2	301.3	361
Envirocage	408.6	931.1	1613	2488	3596	4993	6727	8859
8 w/insul.	68.02	137.7	215.2	300.8	230.9	290.7	355.7	426.2
Envirocage	513.4	1181	2057	3184	4615	6416	8656	11410
10 w/insul.	79.49	161	251.7	352.1	277.9	349.9	428.3	513.3
Envirocage	624.5	1447	2529	3921	5693	7923	10700	14110
12 w/insul.	55.41	187	292.6	409.4	319.2	401.9	491.9	589.6
Envirocage	729.1	1697	2973	4616	6710	9346	12630	16660
14 w/insul.	106.6	216.5	338.9	474.6	355.8	448.1	548.5	657.5
Envirocage	794.5	1854	3250	5050	7345	10230	13830	18260
16 w/insul.	119.2	242.2	379.4	531	397.8	501	613	735.3
Envirocage	899.1	2104	3693	5745	8360	11660	15760	20810

VENEZUELA WINTER

Heat Loss without Calcium insulation , 40mm thick up to 232.2°C and 80mm thick above 232.2°C for an ambient temperature of -6.7° (Winter), wind of .4 m/s in Heat Loss W/m

Process Temperature (C°)

Pipe size (Millimeters)	65.6	121.1	176.7	232.2	287.8	343.3	398.9	454.4
50 w/insul.	1801	35.87	58.73	87.83	83.75	114.4	151.9	197.1
Envirocage	199.4	402.8	660.2	983.3	1389	1893	2516	3279
80 w/insul.	23.78	47.38	77.62	116.1	106.3	145.2	192.8	250.2
Envirocage	269	553	917.2	1378	1960	2686	3587	4690
100 w/insul.	28.62	57.05	93.48	139.9	123.2	168.3	223.5	290.1
Envirocage	329.9	685.6	1145	1728	2466	3389	4537	5943
150 w/insul.	40.63	81.06	132.9	199.1	164.6	224.9	298.9	388
Envirocage	458.4	966.1	1626	2469	3538	4879	6548	8595
200 w/insul.	48.83	97.48	159.9	239.6	194.5	265.7	353.1	458.4
Envirocage	578.8	1230	2078	3163	4543	6275	8431	11080
250 w/insul.	57.11	114.1	187.2	280.5	234.5	320.4	425.8	552.8
Envirocage	706.7	1509	2557	3900	5608	7752	10420	13700
300 w/insul.	66.43	132.7	217.9	326.6	269.5	368.3	489.5	635.5
Envirocage	827.1	1772	3008	4593	6612	9147	12310	16180
350 w/insul.	77.19	154.3	253.5	380.1	330.9	411.2	546.6	709.8
Envirocage	902.3	1936	3290	5026	7239	10020	13480	17730
400 w/insul.	86.4	172	284	425.9	336.6	460.1	611.6	794.2
Envirocage	1023	2199	3741	5719	8241	11410	15360	20220