

**PHILIPPINES 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 80° (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.	16.66	42.69	71.49	103.2	94.2	120.1	148.2	178.6
Envirocage	118	326.7	592.1	927.3	1348	1873	2521	3316
3 w/insul.	21.89	56.13	94.05	135.8	119.3	152	187.6	226.3
Envirocage	157.4	444.9	817.7	1294	1896	2650	3585	4734
4 w/insul.	26.27	67.4	113	163.3	138.1	176.1	217.3	262.1
Envirocage	191.3	548.4	1016	1618	2381	3339	4530	5993
6 w/insul.	37.03	65.13	159.7	231	184.1	234.7	289.8	349.6
Envirocage	261.7	766.5	1437	2303	3407	4798	6529	8658
8 w/insul.	44.46	114.3	191.9	277.7	217.3	277.1	342.2	412.8
Envirocage	327.1	970.9	1831	2947	4370	6165	8401	11150
10 w/insul.	51.96	133.7	224.6	325.1	261.6	333.6	412.1	497.1
Envirocage	396.3	1188	2250	2629	5391	7614	10380	13790
12 w/insul.	60.32	155.3	261	378	300.4	383.2	473.3	471.1
Envirocage	461.3	1392	2644	4272	6354	8982	12260	16290
14 w/insul.	69.72	179.7	302.4	438.2	334.8	527.8	527.8	636.9
Envirocage	501.9	1520	2890	4673	6955	13430	13430	17850
16 w/insul.	77.96	201.1	338.5	490.6	374.4	590.3	590.3	712.3
Envirocage	566.8	1724	3284	5316	7917	15300	15300	20350

**PHILIPPINES 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 26.7° (Winter), wind of .4 m/s in Heat Loss W/m

Process Temperature (C°)

Pipe Size (Millimeters)	65.5	121.1	176.7	232.2	287.8	343.3	398.9	454.4
50 w/insul.	15.94	40.93	68.59	99.01	90.49	115.3	142.3	171.6
Envirocage	109.9	307.1	559.6	879	1282	1783	2405	3167
80 w/insul.	20.94	53.81	90.23	130.3	114.6	146	275.1	217.3
Envirocage	147.2	420.3	776.3	1231	1809	2531	3429	4530
100 w/insul.	25.13	64.61	108.4	156.6	132.7	169.1	208.8	251.8
Envirocage	179.5	519.7	967.7	1543	2275	3194	4338	5743
150 w/insul.	35.41	91.2	153.2	221.6	176.8	225.5	278.5	335.9
Envirocage	65.4	729.5	1373	2203	3264	4598	6262	8306
200 w/insul.	42.52	109.6	184.2	266.6	208.8	266.2	328.8	396.6
Envirocage	309.4	926.3	1753	2823	4191	5914	8064	10710
250 w/insul.	49.7	128.2	215.6	312.1	251.3	320.5	396	477.7
Envirocage	375.7	1135	2156	3479	5173	7307	9971	13240
300 w/insul.	57.7	149	250.6	363	288.6	368.1	454.8	548.7
Envirocage	438.1	1332	2535	4098	6100	8623	11770	15650
350 w/insul.	66.69	172.4	290.4	420.8	321.7	410.5	507.2	612
Envirocage	477.1	1455	2772	4484	6678	9444	12900	17140
400 w/insul.	74.58	192.9	325.1	471.2	359.8	459	567.3	684.5
Envirocage	539.5	1651	3152	5102	7604	10760	14700	19550

**PHILIPPINES 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 100° (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.	12.05	38.12	66.96	98.72	91.12	117	145.1	175.6
Envirocage	85.28	292	555.8	889.7	1310	1833	2481	3276
3 w/insul.	15.84	50.14	88.12	130	175.9	148.2	183.8	222.4
Envirocage	113.6	397.4	767.3	1241	1842	2594	3529	4677
4 w/insul.	19.01	60.22	105.9	156.2	133.6	171.6	212.9	257.7
Envirocage	137.9	489.4	953.5	1552	2313	3269	4459	5922
6 w/insul.	26.81	85.03	149.7	221	178.1	228.8	284	343.7
Envirocage	187.9	683	1347	2209	3310	4698	6427	8555
8 w/insul.	32.2	102.2	179.9	265.8	210.3	270.1	335.3	405.9
Envirocage	234.1	864.3	1716	2825	4245	6037	8270	11020
10 w/insul.	37.64	119.5	210.5	311.1	253.1	325.2	403.7	488.9
Envirocage	282.8	1057	2108	3479	5236	7455	10220	13630
12 w/insul.	43.69	138.8	244.7	361.8	290.7	373.5	463.7	561.6
Envirocage	238.4	1238	2477	4096	6171	8795	12070	16100
14 w/insul.	50.52	160.7	283.5	419.5	324.1	416.5	517.2	626.4
Envirocage	356.9	1351	2707	4481	6755	9631	13220	17640
16 w/insul.	56.48	179.8	317.3	469.7	362.3	465	578.4	700.5
Envirocage	402.5	1532	3076	5097	7690	10970	15060	20110

**PHILIPPINES 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 37.8° (Summer), wind of .4 m/s in Heat Loss W/m

Process Temperature (C°)

Pipe Size (Millimeters)	65.5	121.1	176.7	232.2	287.8	343.3	398.9	454.4
50 w/insul.	11.52	36.55	64.26	94.72	87.54	122.4	139.4	168.7
Envirocage	79.32	274.4	525.2	843.3	1245	1746	2367	3128
80 w/insul.	15.14	48.07	84.55	124.7	110.8	142.3	176.6	213.7
Envirocage	106.1	375.1	728.3	1181	1757	2478	3375	4476
100 w/insul.	18.18	57.74	101.6	149.9	128.4	164.8	204.6	247.6
Envirocage	129.1	463.4	907.4	1480	2210	3127	4270	5673
150 w/insul.	25.63	81.52	143.6	212.1	171.1	219.8	272.8	330.2
Envirocage	176.7	649.6	1286	2113	3170	4502	6164	8207
200 w/insul.	30.78	97.97	172.7	255.2	202	259	322.2	390
Envirocage	220.8	824.1	1642	2706	4071	5790	7938	10580
250 w/insul.	35.98	114.6	202.1	298.7	243.2	312.5	388	469.7
Envirocage	267.3	1009	2019	3335	5025	7155	9816	13090
300 w/insul.	41.78	133.2	235	347.4	279.3	358.9	445.7	539.6
Envirocage	311.1	1184	2375	3929	5925	8443	11590	15460
350 w/insul.	48.29	154.1	272.2	402.8	311.4	400.2	497	601.9
Envirocage	339.4	1293	2597	4299	6486	9247	12700	16940
400 w/insul.	54	172.5	304.8	451.1	348.2	447.5	555.9	673.2
Envirocage	382.1	1467	2952	4891	7386	10540	14470	19320

**PHILIPPINE 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	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	159.5	195.1	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	146.8	184.7	226	270.7
Envirocage	296.6	664.4	1140	1746	2514	3475	4669	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	3598	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.	92.26	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	531.3	397.8	501	613.4	735.3
Envirocage	899.1	2104	3693	5745	8360	11660	15760	20810

**PHILIPPINES 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 4.4° (Winter), wind of .4 m/s in Heat Loss W/m

Process Temperature (C°)

Pipe Size (Millimeters)	65.5	121.1	176.7	232.2	287.8	343.3	398.9	454.4
50 w/insul.	24.48	49.4	77	107.4	96.24	121	148	177.3
Envirocage	169.7	371.3	627.1	949.1	1354	1857	2480	3242
80 w/insul.	32.13	64.91	101.2	141.3	121.8	153.2	187.5	224.5
Envirocage	228.5	509.3	870.9	1330	1910	2635	3535	4637
100 w/insul.	38.55	77.92	121.6	169.8	141.1	177.5	217.1	260
Envirocage	279.7	630.8	1086	1667	2404	3325	4472	5878
150 w/insul.	54.29	109.9	171.8	240.1	188	236.6	289.5	346.8
Envirocage	387.3	887.9	1543	2381	3448	4787	6454	8501
200 w/insul.	65.18	132.1	206.6	188.8	221.9	279.3	341.9	409.6
Envirocage	488.1	1129	1971	3051	4428	6156	8311	10950
250 w/insul.	76.19	154.5	241.8	338.1	267.1	336.2	411.6	493.2
Envirocage	595.1	1385	2425	3761	5465	7606	10270	13550
300 w/insul.	88.45	179.6	281.1	393.3	306.7	386.2	472.8	566.6
Envirocage	695.9	1626	2852	4430	6444	8975	12130	16010
350 w/insul.	102.2	207.8	325.6	455.8	341.9	430.6	527.2	631.9
Envirocage	758.9	1777	3119	4848	7055	9829	13290	17540
400 w/insul.	114.3	232.5	364.5	510.4	382.3	481.5	589.6	706.7
Envirocage	859.6	2018	3547	5516	8032	11200	15150	20000