

NIGERIA 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	1325	1928	2683	3619	4767
4 w/insul.	30.53	71.62	117.2	167.4	140.8	178.7	220	264.7
Envirocage	223.1	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.	60.27	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	350.9	503	381.5	484.8	597.3	719.3
Envirocage	666	1839	3408	5446	8051	11340	15440	20490

NIGERIA 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	37.73	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	4293	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	264.1	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

NIGERIA 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 86° (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.	15.28	41.33	70.14	101.9	93.29	119.1	147.3	177.7
Envirocage	108.2	316.3	581.3	916.1	1337	1861	2509	3304
3 w/insul.	16.82	54.34	92.28	134.1	118.1	150.9	186.5	225.1
Envirocage	144.3	430.7	802.7	1278	1880	2633	3569	4717
4 w/insul.	24.11	65.26	110.9	161.2	136.8	174.7	216	260.8
Envirocage	175.4	530.8	997.7	1598	2360	3318	4509	5972
6 w/insul.	34.93	92.13	156.7	228	182.3	233	288.1	347.8
Envirocage	239.6	741.6	1410	2275	3378	4768	6496	8627
8 w/insul.	40.82	110.7	188.4	274.2	215.2	275	340.2	410.8
Envirocage	299.2	939.1	1797	2910	4333	6127	8362	11110
10 w/insul.	47.7	129.5	220.4	320.9	259	331.1	409.6	494.7
Envirocage	362.2	1149	2207	3584	5345	7566	10330	13740
12 w/insul.	55.38	150.4	256.2	373.2	297.5	380.3	470.5	568
Envirocage	421.3	1346	2594	4219	6299	8926	12200	16230
14 w/insul.	64.02	174.1	296.8	432.6	331.6	424	524.6	633.8
Envirocage	458.3	1469	2836	4616	6895	9774	13360	17790
16 w/insul.	71.58	194.8	332.2	404.4	370.8	474.2	586.7	708.8
Envirocage	517.4	1667	3222	5250	7849	11130	15230	20280

NIGERIA 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 30° (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.	14.68	39.64	67.31	97.75	89.58	114.4	141.5	170.7
Envirocage	101.1	297.4	549.4	868.5	1271	1772	2394	3155
80 w/insul.	19.29	52.12	88.56	128.7	113.5	144.9	179.2	216.3
Envirocage	135.5	406.9	762.1	1216	1793	2515	3413	4514
100 w/insul.	23.15	62.58	106.4	154.7	131.4	167.8	207.6	250.5
Envirocage	165	503	949.9	1524	2256	3174	4318	5722
150 w/insul.	32.63	88.35	150.4	218.8	175.1	223.8	276.8	334.2
Envirocage	226.6	705.8	1347	2176	3236	4570	6233	8277
200 w/insul.	39.18	106.2	180.8	263.2	206.8	264.2	326.9	394.7
Envirocage	283.9	896	1720	2788	4156	5878	8027	10670
250 w/insul.	45.8	124.2	211.6	308.1	248.9	318.1	393.6	475.3
Envirocage	344.5	1098	2115	3437	5130	7262	9925	13200
300 w/insul.	53.17	144.3	246	358.4	285.8	365.4	452.1	546
Envirocage	401.6	1288	2488	4048	6048	8570	11720	15590
350 w/insul.	61.46	167	285	415.5	318.7	407.4	504.2	609
Envirocage	437.2	1407	2720	4429	6622	9386	12840	17080
400 w/insul.	68.72	186.9	319.1	465.2	356.4	455.6	563.9	681.2
Envirocage	494.2	1597	3093	5040	7539	10690	14630	19480

NIGERIA 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 65° (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.	20.04	31.51	74.81	106.5	96.47	122.3	150.4	180.9
Envirocage	142	352.3	618.9	955	1377	1902	2551	3346
3 w/insul.	17.36	39.87	98.4	140.2	122.1	154.9	190.5	299.1
Envirocage	189.8	480.1	854.9	1332	1936	2691	3627	4776
4 w/insul.	20.09	72.66	118.2	168.4	141.4	179.4	220.6	310.8
Envirocage	231	592.2	1063	1666	2431	3390	4582	7393
6 w/insul.	26.74	61.44	167	238.2	188.5	239.1	294.2	353.9
Envirocage	316.9	828.6	1503	2373	3479	4872	6604	8734
8 w/insul.	53.44	123.2	200.8	286.5	222.5	282.3	347.3	417.9
Envirocage	396.9	1050	1917	3036	4463	6260	8496	11250
10 w/insul.	62.45	144.1	234.9	335.3	267.8	339.8	418.2	417.9
Envirocage	481.6	1285	2355	3739	5505	7731	10500	11250
12 w/insul.	43.49	167.4	273	389.9	307.5	390.3	480.4	503.3
Envirocage	561.3	1507	2768	4402	6488	9120	12400	13910
14 w/insul.	48.44	193.7	316.3	452	342.8	435.1	535.7	578.1
Envirocage	611.2	1646	3026	4816	7102	9986	13580	16430
16 w/insul.	54.11	216.7	354	506.1	383.3	486.6	599	644.7
Envirocage	690.9	1867	3439	5478	8085	11370	15480	18000

NIGERIA 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 18.3° (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.	19.25	38.77	63.02	89.68	79.19	117.5	144.5	173.7
Envirocage	132.9	278.6	488	750.4	1079	1811	2434	3195
80 w/insul.	25.28	58.05	94.44	134.5	117.3	148.8	183	220.1
Envirocage	178.4	454	812.2	1269	1847	2571	3469	4571
100 w/insul.	30.33	69.7	113.4	161.6	135.9	272.6	212	254.9
Envirocage	217.8	561.8	1013	1590	2324	3244	4389	5794
150 w/insul.	42.73	98.36	160.3	228.7	181.1	229.7	282.7	340
Envirocage	300.4	789.4	1437	2271	3334	4670	6335	8380
200 w/insul.	51.31	118.2	192.8	275.1	213.8	271.2	333.8	401.6
Envirocage	377.5	1003	1835	2909	4281	6006	8158	10800
250 w/insul.	59.98	138.3	225.6	322	257.3	326.5	401.9	483.6
Envirocage	459.2	1230	2258	3586	5284	7421	10090	13360
300 w/insul.	69.63	160.6	262.3	374.5	295.5	375	461.7	555.5
Envirocage	536.2	1443	2656	4224	6231	8757	11910	15780
350 w/insul.	80.47	185.9	303.8	434.1	329.4	418.1	514.8	619.6
Envirocage	584.3	1577	2904	4622	6821	9591	13050	17300
400 w/insul.	89.98	208.1	340.1	406.1	368	467.6	575.8	693
Envirocage	661.2	1790	3301	5259	7767	10930	14870	19720