

# Underground Gas Polyethylene (PE) Piping Fitting Assembly & Sizing Chart



Featuring the Con-Stab I.D. Seal® Fittings from Continental Industries, Inc. and Medium Density Polyethylene (MDPE) Pipe

# TECHNICAL DATA

Part Number	Tubing Size	Average OD (in.)	SDR	Min. Wall (in.)
PE-8	1/2" CTS	.625	7.0	0.090
PE-12	3/4" IPS	1.050	11.0	0.095
PE-16	1" CTS	1.125	11.5	0.099
PE-16-IPS	1" IPS	1.315	11.0	0.120
PE-20	1-1/4" IPS	1.660	10.0	0.166
PE-24	1-1/2" IPS	1.900	11.0	0.173
PE-32	2" IPS	2.375	11.0	0.216

Normal Pipe Size and SDR must be used to match fittings and IPS PE pipe.  
 Nominal Pipe Size and Min. Wall must be used to match fittings and CTS PE pipe.  
 MDPE pipe complies with ASTM D2513.

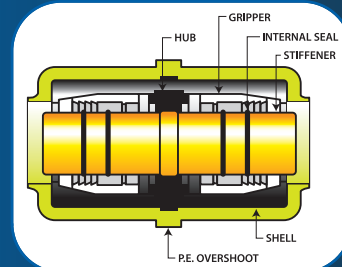
**IMPORTANT**  
**CHAMFER THE**  
**ID OF PIPE**



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**Each Con-Stab I.D. Seal Fitting provides the following unique features:**

- Two internal seals
- Fixed stiffener
- Self-locking gripper
- Moisture lip
- Uni-body construction



Patent #s 5,366,260, 5,692,785 & 5,853,272

# ASSEMBLY INSTRUCTIONS: I.D. SEAL® CON-STAB



**STEP 1**  
Verify the polyethylene (P.E.) pipe being assembled is the correct size.



**STEP 2**  
Cut pipe ends square.



**STEP 3**  
Clean piping thoroughly to assure there is no dirt, grease or oil in assembly area.



**STEP 4**  
Chamfer end of pipe using Continental's chamfering tool with I.D. gauge.



**STEP 5**  
Mark the stab depth by inserting the pipe into the chamfer tool and marking the pipe at the entrance as shown.



**STEP 6**  
If using chamfer tool with ID gauge, check for proper chamfer by inserting pipe over gauge.



**STEP 7**  
Stab pipe completely into fitting entrance.



**STEP 8**  
Stab pipe completely into fitting so that the mark on the pipe is within 1/8" from the fitting entrance.

**STEP 9**  
Repeat steps 1 through 4 for all Con-Stab joints.

**STEP 10**  
To assure proper assembly and to comply with 49 CFR 192 Subpart J-Test requirements, the joint shall be leak tested.



Patent #s 5,366,260, 5,692,785 & 5,853,272

# NATURAL GAS SIZING TABLES FOR PE PIPE

Maximum Capacity of PE Pipe in Cubic Feet per Hour  
with a Gas Pressure of 6.0 in. WC and a Pressure Drop of 0.5 in. WC  
(based on a 0.60 specific gravity gas)

Tubing Size	Tubing Length (ft)														
	5	10	15	20	25	30	40	50	60	70	80	90	100	125	150
1/2" CTS	110	74	59	50	44	39	33	29	26	24	22	21	20	17	16
3/4" IPS	635	426	338	286	252	227	192	169	152	139	129	120	113	100	90
1" CTS	823	553	438	371	326	294	249	219	197	180	167	156	147	129	116
1" IPS	1173	787	624	529	465	419	355	312	281	257	238	223	209	184	166
1-1/4" IPS	2108	1415	1121	950	835	752	638	561	505	462	428	400	376	331	298
1-1/2" IPS	2765	1900	1526	1306	1158	1049	898	796	721	663	617	579	547	485	439
2" IPS	5954	3997	3166	2683	2360	2125	1801	1584	1426	1305	1209	1130	1063	935	842

Tubing Size	Tubing Length (ft)														
	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1/2" CTS	13	12	10	9	8	7	6	6	6	5	5	5	5	4	4
3/4" IPS	76	67	60	51	45	40	37	34	32	30	29	27	26	25	24
1" CTS	99	87	78	66	58	52	48	44	42	39	37	35	34	32	31
1" IPS	141	124	111	94	83	75	68	63	59	56	53	50	48	46	44
1-1/4" IPS	253	222	200	170	149	134	123	114	106	100	95	90	86	83	79
1-1/2" IPS	376	333	302	258	229	207	191	178	167	157	149	143	137	131	126
2" IPS	714	628	565	479	421	380	347	322	301	283	268	255	243	233	224

1,000 BTUh = 1 CFH

Maximum Capacity of PE Pipe in Cubic Feet per Hour  
with a Gas Pressure of 6.0 to 7.0 in. WC (1/4 psig) and a Pressure Drop of 1.0 in. WC  
(based on a 0.60 specific gravity gas)

Tubing Size	Tubing Length (ft)														
	5	10	15	20	25	30	40	50	60	70	80	90	100	125	150
1/2" CTS	165	111	88	74	65	59	50	44	39	36	33	31	29	26	23
3/4" IPS	947	636	503	427	375	338	286	252	227	208	192	180	169	149	134
1" CTS	1228	824	653	553	487	438	371	327	294	269	249	233	219	193	174
1" IPS	1749	1174	930	788	693	624	529	465	419	384	355	332	312	275	247
1-1/4" IPS	3143	2110	1671	1416	1246	1122	951	836	753	689	638	596	561	494	445
1-1/2" IPS	4023	2765	2221	1900	1684	1526	1306	1158	1049	965	898	842	796	705	639
2" IPS	8878	5960	4720	4001	3519	3169	2686	2362	2127	1947	1803	1685	1586	1395	1256

Tubing Size	Tubing Length (ft)														
	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1/2" CTS	20	17	16	13	12	10	10	9	8	8	7	7	7	6	6
3/4" IPS	114	100	90	76	67	60	55	51	48	45	43	41	39	37	36
1" CTS	147	129	117	99	87	78	72	66	62	58	55	53	50	48	46
1" IPS	210	184	166	141	124	112	102	95	88	83	79	75	71	69	66
1-1/4" IPS	377	331	298	253	223	200	183	170	159	149	141	135	128	123	118
1-1/2" IPS	547	485	439	376	333	302	278	258	242	229	217	207	199	191	184
2" IPS	1065	936	843	715	629	566	518	480	448	422	399	380	363	348	334

1,000 BTUh = 1 CFH

# NATURAL GAS SIZING TABLES FOR PE PIPE

Maximum Capacity of PE Pipe in Cubic Feet per Hour  
with a Gas Pressure of 8.0 in. WC and a Pressure Drop of 3.0 in. WC  
(based on a 0.60 specific gravity gas)

Tubing Size	Tubing Length (ft)														
	5	10	15	20	25	30	40	50	60	70	80	90	100	125	150
1/2" CTS	308	210	166	141	124	111	94	83	75	68	63	59	56	49	44
3/4" IPS	1773	1205	955	809	712	641	543	478	430	394	365	341	321	282	254
1" CTS	2298	1561	1236	1048	921	830	703	619	557	510	472	441	415	365	329
1" IPS	3275	2198	1741	1476	1298	1169	991	871	785	718	665	621	585	514	463
1-1/4" IPS	5885	4002	3170	2686	2363	2128	1803	1586	1428	1307	1211	1131	1065	937	843
1-1/2" IPS	7290	5010	4023	3443	3052	2765	2367	2097	1900	1748	1627	1526	1442	1278	1158
2" IPS	16623	10940	8665	7344	6459	5816	4930	4336	3904	3573	3309	3093	2911	2560	2305

Tubing Size	Tubing Length (ft)														
	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1/2" CTS	37	33	30	25	22	20	18	17	16	15	14	13	13	12	12
3/4" IPS	215	189	171	145	127	113	103	96	90	84	80	76	72	69	67
1" CTS	279	245	221	187	165	147	134	124	116	109	103	98	94	90	87
1" IPS	393	345	311	264	232	209	191	177	165	156	147	140	134	128	123
1-1/4" IPS	715	629	566	480	422	375	343	318	297	280	265	252	241	230	222
1-1/2" IPS	991	878	796	681	604	547	503	468	439	415	394	376	360	346	333
2" IPS	1954	1719	1548	1312	1154	1060	970	898	839	790	748	711	679	651	626

1,000 BTUh = 1 CFH

Maximum Capacity of PE Pipe in Cubic Feet per Hour  
with a Gas Pressure of 12.0 to 14 in. WC (1/2 psig or less) and a Pressure Drop of 6.0 in. WC  
(based on a 0.60 specific gravity gas)

Tubing Size	Tubing Length (ft)														
	5	10	15	20	25	30	40	50	60	70	80	90	100	125	150
1/2" CTS	462	310	246	208	183	165	140	123	111	101	94	88	83	73	65
3/4" IPS	2657	1784	1413	1197	1053	948	804	707	637	583	540	504	475	417	376
1" CTS	3445	2313	1832	1553	1366	1230	1042	917	825	755	700	654	615	541	487
1" IPS	4909	3295	2610	2212	1946	1752	1485	1306	1176	1076	997	932	877	771	694
1-1/4" IPS	8821	5922	4690	3975	3496	3148	2668	2347	2114	1934	1791	1674	1576	1386	1248
1-1/2" IPS	10606	7290	5854	5010	4440	4023	3443	3052	2765	2544	2367	2221	2097	1859	1684
2" IPS	24918	16727	13249	11229	9877	8894	7538	6630	5970	5464	5060	4729	4451	3915	3525

Tubing Size	Tubing Length (ft)														
	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1/2" CTS	55	49	44	37	33	29	27	25	23	22	21	20	19	18	17
3/4" IPS	319	280	252	214	188	169	155	144	134	126	120	114	109	104	100
1" CTS	413	363	327	277	244	220	201	186	174	164	155	147	141	135	130
1" IPS	589	518	466	395	348	313	286	265	248	233	221	210	201	192	185
1-1/4" IPS	1058	930	838	710	625	562	515	477	445	419	397	377	361	345	332
1-1/2" IPS	1442	1278	1158	991	878	796	732	681	639	604	573	547	524	503	485
2" IPS	2988	2628	2366	2006	1764	1589	1454	1346	1258	1184	1121	1066	1018	976	938

1,000 BTUh = 1 CFH

# NATURAL GAS SIZING TABLES FOR PE PIPE - ELEVATED PRESSURE

Maximum Capacity of PE Pipe in Cubic Feet per Hour with a Gas Pressure of 2.0 psi and a Pressure Drop of 1.0 psi  
(based on a 0.60 specific gravity gas)

Tubing Size	Tubing Length (ft)														
	5	10	15	20	25	30	40	50	60	70	80	90	100	125	150
1/2" CTS	1167	783	621	526	463	417	353	311	280	256	237	221	208	183	165
3/4" IPS	6710	4504	3568	3024	2660	2395	2030	1785	1608	1471	1363	1273	1198	1054	949
1" CTS	8687	5832	4619	3915	3443	3101	2628	2311	2081	1905	1764	1649	1552	1365	1229
1" IPS	12396	8321	6591	5586	4913	4424	3750	3298	2970	2718	2517	2352	2214	1947	1754
1-1/4" IPS	22276	14953	11844	10038	8829	7950	6738	5927	5337	4884	4523	4227	3979	3500	3151
1-1/2" IPS	25532	17548	14092	12061	10689	9685	8289	7347	6657	6124	5697	5345	5049	4475	4055
2" IPS	62923	42239	33455	28355	24940	22458	19034	16742	15076	13797	12777	11941	11239	9885	8902

Tubing Size	Tubing Length (ft)														
	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1/2" CTS	140	123	111	94	83	74	68	63	59	55	53	50	48	46	44
3/4" IPS	805	708	637	540	475	428	391	363	339	319	302	287	274	263	253
1" CTS	1042	916	825	699	615	554	507	469	439	413	391	372	355	340	327
1" IPS	1486	1307	1177	998	878	790	723	670	626	589	558	530	507	485	467
1-1/4" IPS	2671	2349	2115	1793	1577	1420	1300	1204	1125	1059	1002	953	910	872	838
1-1/2" IPS	3470	3076	2787	2385	2114	1915	1762	1639	1538	1453	1380	1316	1261	1211	1167
2" IPS	7544	6636	5975	5064	4455	4011	3671	3400	3177	2990	2831	2693	2572	2464	2368

1,000 BTUh = 1 CFH

Maximum Capacity of PE Pipe in Cubic Feet per Hour with a Gas Pressure of 5.0 psi and a Pressure Drop of 3.5 psi  
(based on a 0.60 specific gravity gas)

Tubing Size	Tubing Length (ft)														
	5	10	15	20	25	30	40	50	60	70	80	90	100	125	150
1/2" CTS	2544	1708	1353	1147	1008	908	770	677	610	558	517	483	454	400	360
3/4" IPS	14628	9819	7777	6592	5798	5221	4425	3892	3505	3207	2970	2776	2613	2298	2069
1" CTS	18966	12731	10084	8546	7517	6769	5737	5046	4544	4159	3851	3599	3387	2980	2683
1" IPS	27024	18141	14368	12178	10711	9645	8175	7190	6475	5925	5488	5128	4827	4246	3823
1-1/4" IPS	48561	32598	25819	21883	19248	17332	14689	12921	11635	10648	9861	9215	8673	7629	6870
1-1/2" IPS	53153	36532	29336	25108	22253	20163	17257	15294	13858	12749	11860	11128	10512	9316	8441
2" IPS	137172	92082	72933	61813	54370	48959	41494	36498	32865	30078	27855	26031	24500	21550	19405

1,000 BTUh = 1 CFH

Maximum Capacity of PE Pipe in Cubic Feet per Hour with a Gas Pressure of 10.0 psi and a Pressure Drop of 5.0 psi  
(based on a 0.60 specific gravity gas)

Tubing Size	Tubing Length (ft)														
	5	10	15	20	25	30	40	50	60	70	80	90	100	125	150
1/2" CTS	3529	2369	1877	1590	1399	1260	1068	939	846	774	717	670	630	554	499
3/4" IPS	20291	13621	10789	9144	8043	7242	6138	5399	4862	4449	4120	3851	3624	3188	2871
1" CTS	26309	17661	13988	11856	10428	9390	7958	7000	6303	5769	5342	4993	4699	4133	3722
1" IPS	37487	25164	19931	16893	14858	13380	11340	9974	8982	8220	7612	7114	6696	5889	5303
1-1/4" IPS	67362	45220	35816	30355	26700	24043	20377	17923	16139	14770	13679	12783	12032	10583	9530
1-1/2" IPS	72320	49705	39915	34162	30277	27433	23479	20809	18855	17346	16137	15141	14302	12676	11485
2" IPS	190283	127734	101171	85746	75421	67915	57560	50629	45590	41723	38639	36109	33987	29894	26919

1,000 BTUh = 1 CFH



# LP GAS SIZING TABLES FOR PE PIPE

Maximum Capacity of PE Pipe in Thousands of BTU per Hour of Liquefied Petroleum Gas  
with a Gas Pressure of 11.0 in. WC and a Pressure Drop of 0.5 in. WC  
(based on a 1.52 specific gravity gas)

Tubing Size	Tubing Length (ft)														
	5	10	15	20	25	30	40	50	60	70	80	90	100	125	150
1/2" CTS	187	125	99	84	74	67	56	50	45	41	38	35	33	29	26
3/4" IPS	1073	720	571	484	425	383	325	286	257	235	218	204	192	169	152
1" CTS	1391	934	740	627	551	497	421	370	333	305	283	264	249	219	197
1" IPS	1983	1331	1054	893	786	708	600	528	475	435	403	376	354	311	280
1-1/4" IPS	3563	2391	1894	1605	1412	1272	1078	948	854	781	723	676	636	560	504
1-1/2" IPS	4724	3247	2608	2232	1978	1792	1534	1359	1232	1133	1054	989	934	828	750
2" IPS	10063	6755	5351	4535	3989	3592	3044	2678	2411	2207	2044	1910	1797	1581	1424

Tubing Size	Tubing Length (ft)														
	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1/2" CTS	22	20	18	15	13	12	11	10	9	9	8	8	8	7	7
3/4" IPS	129	113	102	86	76	68	63	58	54	51	48	46	44	42	40
1" CTS	167	147	132	112	99	89	81	75	70	66	63	60	57	54	52
1" IPS	238	209	188	160	140	126	116	107	100	94	89	85	81	78	75
1-1/4" IPS	427	376	338	287	252	227	208	192	180	169	160	152	146	140	134
1-1/2" IPS	642	569	516	441	391	354	326	303	285	269	255	244	233	224	216
2" IPS	1207	1061	956	810	712	642	587	544	508	478	453	431	411	394	379

2,516 BTUH = 1 CFH

Maximum Capacity of PE Pipe in Thousands of BTU per Hour of Liquefied Petroleum Gas  
with a Gas Pressure of 2.0 psi and a Pressure Drop of 1.0 psi  
(based on a 1.52 specific gravity gas)

Tubing Size	Tubing Length (ft)														
	5	10	15	20	25	30	40	50	60	70	80	90	100	125	150
1/2" CTS	1966	1319	1045	886	779	702	595	523	471	431	399	373	351	309	278
3/4" IPS	11300	7586	6008	5092	4479	4033	3418	3007	2707	2478	2295	2144	2018	1775	1599
1" CTS	14652	9835	7790	6602	5807	5229	4432	3898	3510	3213	2975	2780	2617	2302	2073
1" IPS	20877	14014	11100	9408	8275	7451	6315	5555	5002	4578	4239	3962	3729	3280	2953
1-1/4" IPS	37514	25183	19946	16905	14869	13389	11348	9982	8988	8226	7618	7119	6700	5894	5307
1-1/2" IPS	43429	29848	23969	20515	18182	16474	14100	12496	11322	10417	9691	9092	8589	7612	6897
2" IPS	105963	71131	56339	47750	42000	37820	32054	28194	25388	23234	21517	20108	18926	16647	14990

Tubing Size	Tubing Length (ft)														
	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1/2" CTS	236	207	187	158	139	125	115	106	99	93	88	84	80	77	74
3/4" IPS	1355	1192	1073	910	800	720	659	611	571	537	508	484	462	443	425
1" CTS	1757	1545	1391	1179	1037	934	855	792	740	696	659	627	599	574	551
1" IPS	2503	2202	1983	1680	1478	1331	1218	1128	1054	992	939	893	853	818	786
1-1/4" IPS	4498	3956	3563	3019	2656	2391	2189	2027	1894	1783	1688	1605	1533	1469	1412
1-1/2" IPS	5903	5232	4740	4057	3596	3258	2997	2788	2616	2471	2347	2239	2144	2060	1985
2" IPS	12705	11175	10063	8529	7502	6755	6182	5725	5350	5036	4767	4535	4331	4150	3988

2,516 BTUH = 1 CFH

Maximum Capacity of PE Pipe in Thousands of BTU per Hour of Liquefied Petroleum Gas  
with a Gas Pressure of 10.0 psi and a Pressure Drop of 1.0 psi  
(based on a 1.52 specific gravity gas)

Tubing Size	Tubing Length (ft)														
	5	10	15	20	25	30	40	50	60	70	80	90	100	125	150
1/2" CTS	2476	1662	1316	1116	981	884	749	659	593	543	503	470	442	389	350
3/4" IPS	14234	9555	7568	6414	5642	5080	4306	3787	3410	3121	2890	2701	2542	2236	2014
1" CTS	18455	12388	9812	8316	7315	6587	5583	4910	4422	4047	3747	3502	3296	2899	2611
1" IPS	26296	17652	13981	11849	10423	9385	7954	6997	6300	5766	5340	4990	4697	4131	3720
1-1/4" IPS	47252	31720	25123	21293	18729	16865	14294	12572	11321	10361	9595	8967	8440	7423	6685
1-1/2" IPS	53960	37087	29782	25489	22591	20469	17519	15527	14068	12943	12041	11297	10671	9458	8569
2" IPS	133476	89601	70967	60148	52905	47640	40376	35514	31980	29267	27104	25329	23840	20970	18882

Tubing Size	Tubing Length (ft)														
	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1/2" CTS	297	261	235	199	175	158	144	134	125	118	111	106	101	97	93
3/4" IPS	1707	1501	1352	1146	1008	907	830	769	719	676	640	609	582	557	536
1" CTS	2213	1946	1753	1485	1306	1176	1077	997	932	877	830	790	754	723	695
1" IPS	3153	2773	2497	2116	1862	1676	1534	1421	1328	1250	1183	1125	1075	1030	990
1-1/4" IPS	5665	4983	4487	3803	3345	3012	2757	2553	2386	2246	2126	2022	1931	1851	1779
1-1/2" IPS	7334	6500	5890	5041	4468	4048	3724	3465	3251	3071	2916	2782	2664	2560	2466
2" IPS	16004	14077	12676	10743	9449	8509	7787	7212	6739	6343	6005	5712	5455	5227	5024

2,516 BTUH = 1 CFH

Gastite Division  
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