

PEXALGAS™ GAS PIPING SYSTEM



Certified to:

- **International Fuel Gas Code (IFGC)** 2021, 2018, 2015, 2012 & 2009
- **International Residential Code (IRC)** 2018, 2015, 2012, & 2009
- **Uniform Plumbing Code (UPC)** 2021, 2018, 2015, 2012 & 2009
- **ICC-ES PMG-1588**

Meets:

- **ASTM F1281-2017** – Standard Specification for Cross-linked Polyethylene/Aluminum/Cross-linked Polyethylene (PEX-AL-PEX) Pressure Pipe
- **AS 4176.8-2010** Multilayer pipes for pressure applications, Part 8: Multilayer pipe systems for consumer gas installations with a maximum operating pressure up to and including 5 bar (500 kPa) - Specifications for systems (ISO 17484-1:2006, MOD)

Features

The characteristics of the PEXALGAS™ pipes make this product highly reliable and extremely easy to install.

Durability and mechanical strength

The mechanical characteristics of the PEXALGAS™ pipes are such that the bursting pressure at room temperature (in relation to the pipe diameter) is more than 100 bar.

Smoothness and resistance to scale formation

The extreme smoothness of the inner surface (roughness of 0.007 mm) prevents the formation of deposits such as limescale and also ensures low pressure drops over time.

Resistance to abrasion

Crosslinked polyethylene is abrasion resistant since the pipes are not affected by the abrasive action of impurities that are carried.

Flexibility and shape stability

The combination of crosslinked polyethylene and aluminum offers excellent flexibility features in bending. The PEXALGAS™ pipe can be bent manually up to the 32 mm (1" eq.) diameter, with curvature radii of up to 2.5 times the diameter. The excellence of the PEXALGAS™ pipes resides also in its extraordinary shape stability: once bent and installed, it maintains the configuration over time allowing a reduction of the number of anchoring clips needed, which in surface mounting is reduced by 40% of the clips required for plastic pipes such as PEX, PE-RT, PP-R, PB, PVC.

EQ. = closest US equivalent fitting size

PEXALGAS™ GAS PIPING SYSTEM

Thermal expansion

Thermal expansion is about 8 times lower than that of plastic pipes and is comparable to that of metal pipes. A 10 m PEXALGAS™ pipe subjected to a 50°C temperature difference will expand by 13 mm in contrast to a plastic pipe (crosslinked polyethylene) that expands by 90 mm (3.54”).

Lightweight

The pipes are extremely lightweight compared to metal pipes: the weight is 1/3 compared to that of a corresponding copper pipe, 1/10 compared to that of a corresponding steel pipe and 1/2 compared of a corresponding normal CSST pipes.

Acoustic insulation

Crosslinked polyethylene is elastic and absorbs vibrations and therefore offers excellent acoustic insulation.

Oxygen and light barrier

The butt-welded aluminum layer represents a permanent oxygen and light barrier, avoiding in this way the two main causes of algae formation and corrosion in plastic pipes.

Ecology

PEXALGAS™ is manufactured with fully recyclable materials, the production processes are energetically efficient in order to have a low impact on the environment. The manufacturing process adopts “Green Building” sustainability principles, with an eye on environmental protection and conservation of resources.

PEXALGAS™ GAS PIPING SYSTEM

Technical Data

Features	Values
Material	Crosslinked polyethylene internal layer PEX-b, internal bonding layer, intermediate aluminum layer, external bonding layer crosslinked polyethylene external layer PEX-b
Color	Yellow RAL 1023
Dimensions	16-32 mm
Application	Gas supply
Fittings	PEXALGAS™ crimp fittings
Minimum operating temperature	-40°C
Maximum temperature	+60°C
Density at 23°C	> 0,950 g/cm ³ (crosslinked polyethylene)
Softening temperature	135°C
Thermal expansion coefficient	0,026 mm/m-K
Thermal conductivity	0,42÷0,52 W/m-K
Internal roughness	0,007 mm
Oxygen permeability	0 mg/l
Halogen levels	Halogen-free

PEXALGAS™ Gas pipe features (diameters from 16 to 32 mm)

External diameter	[mm]	16 mm (3/8" eq.)	20 mm (1/2" eq.)	26 mm (3/4" eq.)	32 mm (1" eq.)
Thickness	[mm]	2	2	3	3
Internal diameter	[mm]	12	16	20	26
Weight	[lbs/m]	24.92/100	34.39/100	63.05/100	85.98/100

EQ. = closest US equivalent fitting size

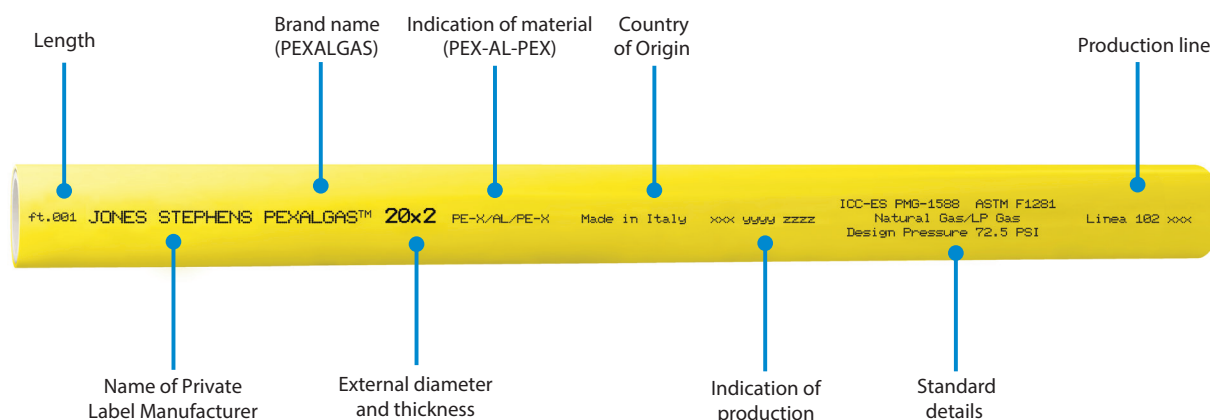
PEXALGAS™ GAS PIPING SYSTEM

Brass press fittings for PEXALGAS™

Diameter	EQ. Size	PEXALGAS™ Pressing Tool	Manual PEXALGAS™ Press Tool
16 mm x 2 mm	3/8"	PCJ16	PMC16202632
20 mm x 2 mm	1/2"	PCJ20	PMC16202632
26 mm x 3 mm	3/4"	PCJ26	PMC16202632
32 mm x 3 mm	1"	PCJ32	PMC16202632

Markings

The marking of the PEXALGAS™ pipes contains all the information required by current regulations as well as all the data necessary to trace the product.



EQ. = closest US equivalent fitting size

SIZING TABLES

Jones Stephens sizing tables reflect the real pressure drop of the pipe and fittings. Sizing must be done in accordance with NFPA 54 (National Fuel Gas Code), using both the TUBES and the FITTINGS sizing tables: this means that the results will be perfectly sized for the real installation. Please reference the editable sizing charts to calculate for specific applications.

Natural Gas <2psi

Working Conditions		
Natural gas	-	-
6" WC	less than 2psi	-
Pressure drop	0.300	WC [inch]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft³/h]			
5.0	97	206	370	737
10.0	67	142	254	506
15.0	54	114	204	407
20.0	46	97	175	348
25.0	41	86	155	308
30.0	37	78	140	279
40.0	31	67	120	239
50.0	28	59	107	212
60.0	25	54	97	192
70.0	23	49	89	177
80.0	22	46	83	164
90.0	20	43	78	154
100.0	19	41	73	146
150.0	15	33	59	117
200.0	13	28	50	100
250.0	12	25	45	89
300.0	11	23	40	80
350.0	10	21	37	74
400.0	9	19	35	69
450.0	8	18	32	65
500.0	8	17	31	61

SIZING TABLES

Natural Gas <2psi

Working Conditions		
Natural gas	-	-
6-7" WC	less than 2psi	-
Pressure drop	0.500	WC [inch]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft ³ /h]			
5.0	128	272	488	971
10.0	88	187	335	668
15.0	71	150	269	536
20.0	60	128	231	459
25.0	54	114	204	407
30.0	48	103	185	368
40.0	41	88	158	315
50.0	37	78	140	279
60.0	33	71	127	253
70.0	31	65	117	233
80.0	29	61	109	217
90.0	27	57	102	203
100.0	25	54	97	192
150.0	20	43	78	154
200.0	17	37	66	132
250.0	15	33	59	117
300.0	14	30	53	106
350.0	13	27	49	98
400.0	12	25	46	91
450.0	11	24	43	85
500.0	11	23	40	80

SIZING TABLES

Natural Gas <2psi

Working Conditions		
Natural gas	-	-
8" WC	less than 2psi	-
Pressure drop	3.000	WC [inch]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft ³ /h]			
5.0	337	717	1287	2560
10.0	232	492	884	1760
15.0	186	395	710	1413
20.0	159	338	608	1209
25.0	141	300	539	1072
30.0	128	272	488	971
40.0	109	233	418	831
50.0	97	206	370	737
60.0	88	187	335	668
70.0	81	172	309	614
80.0	75	160	287	571
90.0	71	150	269	536
100.0	67	142	254	506
150.0	54	114	204	407
200.0	46	97	175	348
250.0	41	86	155	308
300.0	37	78	140	279
350.0	34	72	129	257
400.0	31	67	120	239
450.0	30	63	113	224
500.0	28	59	107	212

SIZING TABLES

Natural Gas <2psi

Working Conditions		
Natural gas	-	-
12-14" WC	less than 2psi	-
Pressure drop	6.000	WC [inch]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft ³ /h]			
5.0	490	1043	1872	3725
10.0	337	717	1287	2560
15.0	271	575	1033	2056
20.0	232	492	884	1760
25.0	205	436	784	1560
30.0	186	395	710	1413
40.0	159	338	608	1209
50.0	141	300	539	1072
60.0	128	272	488	971
70.0	118	250	449	894
80.0	109	233	418	831
90.0	103	218	392	780
100.0	97	206	370	737
150.0	78	166	297	592
200.0	67	142	254	506
250.0	59	126	226	449
300.0	54	114	204	407
350.0	49	105	188	374
400.0	46	97	175	348
450.0	43	91	164	327
500.0	41	86	155	308

SIZING TABLES

Natural Gas 2psi - 1psi

Working Conditions		
Natural gas	-	-
Inlet Pressure	2.000	[Psi]
Pressure Drop	1.000	[Psi]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft ³ /h]			
5.0	1180	2510	4506	8968
10.0	811	1725	3097	6164
15.0	651	1385	2487	4950
20.0	557	1186	2129	4236
25.0	494	1051	1887	3754
30.0	448	952	1709	3402
40.0	383	815	1463	2912
50.0	340	722	1297	2580
60.0	308	654	1175	2338
70.0	283	602	1081	2151
80.0	263	560	1006	2001
90.0	247	525	943	1878
100.0	233	496	891	1774
150.0	187	399	716	1424
200.0	160	341	612	1219
250.0	142	302	543	1080
300.0	129	274	492	979
350.0	118	252	453	901
400.0	110	234	421	838
450.0	103	220	395	786
500.0	98	208	373	742

SIZING TABLES

Natural Gas 5psi - 3.5psi

Working Conditions		
Natural gas	-	-
Inlet Pressure	5.000	[Psi]
Pressure Drop	3.500	[Psi]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft ³ /h]			
5.0	2457	5225	9381	18670
10.0	1688	3591	6448	12832
15.0	1356	2884	5178	10304
20.0	1160	2468	4431	8819
25.0	1029	2187	3928	7816
30.0	932	1982	3559	7082
40.0	798	1696	3046	6061
50.0	707	1503	2699	5372
60.0	640	1362	2446	4867
70.0	589	1253	2250	4478
80.0	548	1166	2093	4166
90.0	514	1094	1964	3909
100.0	486	1033	1855	3692
150.0	390	830	1490	2965
200.0	334	710	1275	2538
250.0	296	629	1130	2249
300.0	268	570	1024	2038
350.0	247	525	942	1875
400.0	229	488	876	1744
450.0	215	458	822	1636
500.0	203	433	777	1546

SIZING TABLES

LP Gas (Propane) <2psi

Working Conditions		
Propane	-	-
Inlet Pressure	11	WC [inch]
Pressure Drop	0.500	WC [inch]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Propane [ft ³ /h]			
5.0	208	443	795	1583
10.0	143	304	547	1088
15.0	115	244	439	874
20.0	98	209	376	748
25.0	87	185	333	663
30.0	79	168	302	600
40.0	68	144	258	514
50.0	60	127	229	455
60.0	54	115	207	413
70.0	50	106	191	380
80.0	46	99	177	353
90.0	44	93	167	331
100.0	41	88	157	313
150.0	33	70	126	251
200.0	28	60	108	215
250.0	25	53	96	191
300.0	23	48	87	173
350.0	21	44	80	159
400.0	19	41	74	148
450.0	18	39	70	139
500.0	17	37	66	131

SIZING TABLES

LP Gas (Propane) 2psi -1 psi

Working Conditions		
Propane	-	-
Inlet Pressure	2.000	[Psi]
Pressure Drop	1.000	[Psi]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Propane [ft ³ /h]			
5.0	1915	4072	7312	14551
10.0	1316	2799	5025	10001
15.0	1057	2247	4035	8031
20.0	904	1924	3454	6873
25.0	802	1705	3061	6092
30.0	726	1545	2774	5520
40.0	622	1322	2374	4724
50.0	551	1172	2104	4187
60.0	499	1062	1906	3794
70.0	459	977	1754	3490
80.0	427	909	1631	3247
90.0	401	853	1531	3046
100.0	379	805	1446	2878
150.0	304	647	1161	2311
200.0	260	553	994	1978
250.0	231	491	881	1753
300.0	209	444	798	1588
350.0	192	409	734	1461
400.0	179	380	683	1359
450.0	168	357	641	1275
500.0	159	337	605	1205

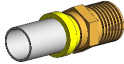
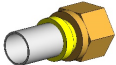
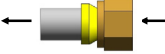
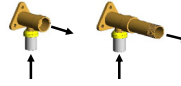
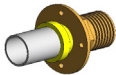
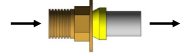
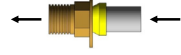
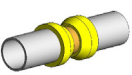
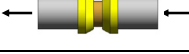
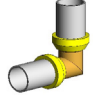
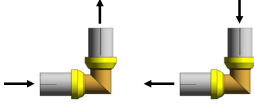
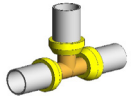
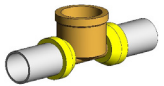
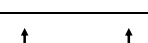
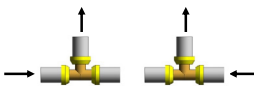
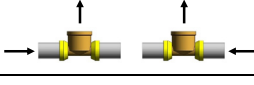
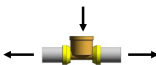
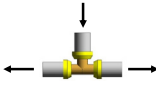
SIZING TABLES

LP Gas (Propane) 5psi -3.5 psi

Working Conditions		
Propane	-	-
Inlet Pressure	5.000	[Psi]
Pressure Drop	3.500	[Psi]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Propane [ft ³ /h]			
5.0	3986	8477	15221	30292
10.0	2740	5826	10462	20820
15.0	2200	4679	8401	16719
20.0	1883	4004	7190	14309
25.0	1669	3549	6373	12682
30.0	1512	3216	5774	11491
40.0	1294	2752	4942	9835
50.0	1147	2439	4380	8716
60.0	1039	2210	3968	7898
70.0	956	2033	3651	7266
80.0	889	1892	3396	6759
90.0	835	1775	3187	6342
100.0	788	1677	3010	5991
150.0	633	1346	2417	4811
200.0	542	1152	2069	4117
250.0	480	1021	1834	3649
300.0	435	925	1661	3306
350.0	400	851	1528	3042
400.0	372	792	1422	2830
450.0	349	743	1334	2655
500.0	330	702	1260	2508

SIZING TABLES

FITTINGS PRESSURE LOSSES IN EQUIVALENT PIPE LENGTH (ft)		
FITTING	FLOWRATE DIRECTION	VALUE
NPT male couplings 		3.28
		
NPT female couplings 		3.28
		
Wingback elbows 		3.28
Floor/Wall mountings 		1.03
		
Couplings 		1.03
		
Press & NPT elbows 		2.26
Press & NPT tees  	   	1.64
	 	4.51
	 	4.92