PolyPipe

POLYSTOUT1™

Polyamide 12 (PA12) Gas Pipe for Increased Pressure Applications

- PolyPipe's POLYSTOUT1™ PA12 Gas Pipe is manufactured from Evonik's Vestamid® NRG 2101 YE polyamide resin
- Manufactured in accordance with ASTM F2785
- Meets the short & long term property requirements of a PA42316 resin class per ASTM D6779 & D2837
- For increased pressure applications up to 250 psi design pressure and 180°F upper temperature limit
- 6" OD and less have been adopted by PHMSA and are included in the Code of Federal Regulation
- BARCODE printline per ASTM F2897 for DIMP compliance and in accordance with 49 CFR Part 192 (Amdt. 192-124)

SAMPLE PRINTLINE	2"IPS DR 11 - PolyPipe® POLYSOUT1 PA12 Gas Pipe - PA42316CH - ASTM F2785 - LL - 5E - ##DATE##TIME ##:##:## – AbCdEf123467abcd BARCODE – ###FT COIL XX
APPLICATION	Natural Gas Distribution, Oil & Gas, Steel Pipe Replacement
SIZE RANGE	1/2" - 8" IPS. Contact PolyPipe for additional sizes.
COLOR/STRIPE	Solid Yellow

POLYSTOUT1™ PA12 Gas Pipe is an innovative piping alternative to steel pipe infrastructure allowing for increased operating pressures, enhanced corrosion resistance, no cathodic protection costs, butt fusion & electrofusion compatible, can be coiled in 500' lengths, HDD installed, and squeezed-off using traditional tools.

PolyPipe

POLYSTOUT1™

POLYSTOUT1™ PA12 Gas Pipe is manufactured using a premium grade polyamide resin that allows for higher operating pressures, increased durability, and increased temperature usage limits.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	ASTM / ISO TEST	*NOMINAL VALUES
		PA42316 PA12 Resin Class
Density, Yellow	D792	1.20 gm/cc
Flow Rate (190°C/21.6 kg)	D1238	7.5 gm/10 min.
Tensile Strength @ Yield	ISO 527	5,802 psi (40 Mpa)
Flexural Modulus, 23°C	ISO 178	181,297 psi (1250 Mpa)
Resistance to Rapid Crack Propagation, Full Scale Pc @ 0°C	ISO 13478	> 220 psi (15.2 bar)
Resistance to Rapid Crack Propagation, S-4 Pc @ 0°C	ISO 13477	> 50.8 psi (3.5 bar)
PENT	F1473	> 1000 hrs
Hardness, Shore D	ISO 7619-1	73
Vicat Softening Temperature (10N, 50N)	ISO 306	338°F, 302°F
Volume Resistivity	IEC 62631-3-1	>1E13 ohm-m
Thermal Expansion Coefficient	ISO 11359-1/-2	144 E-6/K
Melt Temperature	D3418	351°F
CELL CLASSIFICATION	D6779/F2785	PA42316CH
PPI HYDROSTATIC DESIGN BASIS (HDB) (as listed in PPITR-4)	D2837	3,150 psi @ 73.4°F 2,000 psi @ 140°F

*Nominal values are intended to be guides only, and not as specification limit. Specific values may vary based upon resin compound.

- Some of the data listed above was determined from compression molded test specimens; therefore may deviate from pipe specimens.

PolyPipe

PolyStout 1™

POLYAMIDE (PA12) PA42316 GAS PIPE DATA & PRESSURE RATINGS--IPS

NOMINAL PIPE SIZE, INCHES	DR	DESIGN PRESSURE RATING FOR NATURAL GAS, PSIG @73°F	DIMENSIONS			STANDARD LENGTH, FT	WEIGHT LBS PER 100 FT
			Average OD, inches	Min. Wall Thickness, inches	Avg. Wall Thickness, inches		
IPS							
½	9.3	250	0.840	0.090	0.095	500	10
¾	9.0	250	1.050	0.117	0.124	500	16
¾	11.0	250	1.050	0.095	0.101	500	13
1	11.0	250	1.315	0.120	0.127	500	21
1*	13.5	202	1.315	0.097	0.103	500	17
2	11.0	250	2.375	0.216	0.229	500, 50, 40	68
2*	13.5	202	2.375	0.176	0.187	500, 50, 40	57
4	11.0	250	4.500	0.409	0.434	500, 50, 40	245
4	13.5	202	4.500	0.333	0.353	500, 50, 40	203
6	11.0	250	6.625	0.602	0.638	50, 40	531
6	13.5	202	6.625	0.491	0.520	50, 40	441
8*	11.0	250	8.625	0.784	0.831	50, 40	900
8*	13.5	202	8.625	0.639	0.677	50, 40	748

NOTES:
Per the Plastic Pipe Final Rule effective January 22, 2019, (Docket # PHMSA-2014-0098/Amendment #192-124), PA12 for gas pipe (per ASTM F2785) is Incorporation by Reference (IBR) of Plastics Related Standards and Technical Documents into §192.7.
§ 192.121(e) states design pressure shall not exceed 250 psi.
6" OD and smaller are approved sizes by PHMSA & are included in the Code of Federal Regulation.
Some sizes are special order. Call for availability on sizes or DR's not shown.
The above weights are calculated per PPI TR-7, using a density of 1.20 gm/cc.
*Size is not PHMSA approved for gas distribution.

PolyPipe

POLYSTOUT 1™

NOMINAL PIPE SIZE, INCHES	DR	DESIGN PRESSURE RATING* FOR NATURAL GAS, PSIG @73°F	DIMENSIONS			WEIGHT LBS/FT	WEIGHT per LBS/1000 FT
			Average OD, inches	Min. Wall Thickness, inches	Avg. Wall Thickness, inches		
IPS							
½	7	420	0.840	0.120	0.127	0.126	125.96
½	9	315	0.840	0.093	0.099	0.102	101.54
½	9.3	304	0.840	0.090	0.095	0.099	98.68
½	11	252	1.840	0.076	0.081	0.197	196.91
¾	7	420	1.050	0.150	0.159	0.197	196.81
¾	9	315	1.050	0.117	0.124	0.160	159.54
¾	11	252	1.050	0.095	0.101	0.133	132.80
¾	13.5	202	1.050	0.078	0.083	0.111	111.11
1	7	420	1.315	0.188	0.199	0.309	308.88
1	9	315	1.315	0.146	0.155	0.249	249.44
1	11	252	1.315	0.120	0.127	0.210	209.89
1	13.5	202	1.315	0.097	0.103	0.173	173.14
2	7	420	2.375	0.339	0.359	1.006	1006.21
2	9	315	2.375	0.264	0.280	0.815	814.50
2	11	252	2.375	0.216	0.229	0.683	682.59
2	13.5	202	2.375	0.176	0.187	0.567	567.18
3	7	420	3.500	0.500	0.530	2.187	2186.74
3	9	315	3.500	0.389	0.412	1.769	1768.68
3	11	252	3.500	0.318	0.337	1.481	1481.10
3	13.5	202	3.500	0.259	0.275	1.230	1230.16
4	7	420	4.500	0.643	0.682	3.615	3615.47
4	9	315	4.500	0.500	0.530	2.923	2923.01
4	11	252	4.500	0.409	0.434	2.449	2449.12
4	13.5	202	4.500	0.333	0.353	2.034	2033.53
6	7	420	6.625	0.946	1.003	7.832	7831.97
6	9	315	6.625	0.736	0.780	6.335	6334.62
6	11	252	6.625	0.602	0.638	5.307	5307.22
6	13.5	202	6.625	0.491	0.520	4.414	4413.72
8	7	420	8.625	1.232	1.306	13.278	13278.15
8	9	315	8.625	0.958	1.015	10.735	10734.78
8	11	252	8.625	0.784	0.831	8.998	8997.97
8	13.5	202	8.625	0.639	0.677	7.478	7478.43

49 CFR § 192.121(e) states design pressure shall not exceed 250 psi for natural gas distribution

PA12 Pipe Weights By Dimension Ratio (lbs/ft)

IPS Pipe Size (in)	DR7	DR9	D11	DR13.5
1/2"	0.126	0.102		
3/4"	0.197	0.160	0.133	0.111
1"	0.309	0.249	0.210	0.173
2"	1.006	0.815	0.683	0.567
3"	2.187	1.769	1.481	1.230
4"	3.615	2.923	2.449	2.034
6"	7.832	6.335	5.307	4.414
8"	13.278	10.735	8.998	7.478

The above weights are calculated per PPI TR-7, using a density of 1.20 gm/cc.