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## Installation Information

### RECOMMENDATIONS FOR INSTALLERS AND USERS:

Plastic piping systems should be **ENGINEERED, INSTALLED, and OPERATED** in accordance with **ESTABLISHED DESIGN AND ENGINEERING STANDARDS AND PROCEDURES** for plastic piping systems. Suitability for the intended service application should be determined by the installer and/or user prior to installation of a plastic piping system. **PRIOR TO ASSEMBLY, all piping system components should be inspected for damage or irregularities. Mating components should be checked to assure that tolerances and engagements are compatible. Do not use any components that appear irregular or do not fit properly. Contact the appropriate manufacturer of the component product in question to determine usability. Consult all applicable codes and regulations for compliance prior to installation.**

**SOLVENT WELD CONNECTIONS** - Use quality solvent cements and primers formulated for the intended service application, pipe size and type of joint. While the pipe and fitting materials may be compatible with the intended medium, the solvent cement may not be. Consult the manufacturer for suitability of use. Read and follow the cement and primer manufacturers' applications and cure time instructions thoroughly. Be sure to use the correct size applicator.

**THREADED CONNECTIONS** - Use a quality grade thread sealant. **WARNING: SOME PIPE JOINT COMPOUNDS OR PTFE PASTES MAY CONTAIN SUBSTANCES THAT COULD CAUSE STRESS CRACKING TO PLASTIC.** Spears® Manufacturing Company recommends the use of Spears® which has been tested for compatibility with Spears® products. Please follow the sealant manufacturers' application/ installation instructions. Choice of an appropriate thread sealant other than those listed above is at the discretion of the installer. 1 to 2 turns beyond **FINGER TIGHT** is generally all that is required to make a sound plastic threaded connection. Unnecessary **OVERTIGHTENING** will cause **DAMAGE TO BOTH PIPE AND FITTING**.

**INSERT FITTING INSTALLATION** - Pipe is cut to length with handsaw or knife. When installing flexible lines: (a) Snake line one foot or more per 100 lineal feet. (b) Cold water should be run through lines prior to backfilling to permit pipe to contract. (c) Care should be taken to prevent large and sharp-edged rocks from being in position to crush pipe. Insert fittings are used to join lengths of flexible pipe. Stainless steel clamps are first slipped over ends of pipe; fitting is inserted and steel clamps are tightened securely over barbs on fittings. **DO NOT** use oil or detergent on any fittings. Use plain water or soapy water as lubricant on fitting. For attachment to previously installed metallic systems or threaded fixtures, the insert adapter is utilized. Apply thread sealant to the threaded end of adapter and tighten into female connection. Steel clamp is then slipped over pipe end and pipe slipped over serrated end of insert adapter. Steel clamp is then positioned over serrations on insert adapter and securely tightened with a screwdriver.

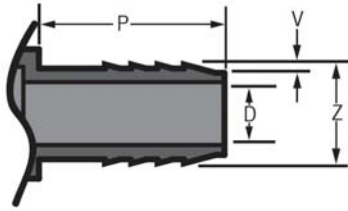
**TWIST LOCK INSERT INSTALLATION** - Twist Lock Fittings with built in lock ring are installed the same as regular Insert Fittings, but do not require steel clamps. Check that lock ring component is fully threaded onto fitting. Slip pipe over serrated end of insert adapter. Twist lock ring back over pipe and barb to seal.

**SPIRAL BARB FITTING INSTALLATION** - Spiral Barb fittings are designed for use with 1/2" (.490) polyethylene irrigation hose and do not require steel clamps. Install with a twisting motion to fully engage barbs.

"Lead Free" low lead certification - unless otherwise specified, all Spears® PVC & PP Insert Fittings specified here-in are certified by NSF International to ANSI/NSF® Standard 61, Annex G and is in compliance with California's Health & Safety Code Section 116825 (commonly known as AB1953) and Vermont Act 193. Weighted average lead content <=0.25%.



## Barbed Insert Fittings Weights & Dimensions



**Dimensions of Insert Ends  
ASTM D 2609**

Nominal Size in.	Insert Length "P" min.	Barb O.D. "Z" max. min.	Barb Depth "V" min.	Inside Diameter "D" min.
1/2	1-1/4	.665 .635	.015	.406
3/4	1-1/4	.865 .835	.015	.562
1	1-1/4	1.095 1.065	.020	.750
1-1/4	1-1/4	1.425 1.395	.025	.995
1-1/2	1-1/2	1.665 1.630	.030	1.125
2	1-1/2	2.125 2.085	.030	1.656
2-1/2	2	2.520 2.487	.030	2.062
3	2-1/8	3.125 3.086	.030	2.600
4	3	4.090 4.044	.030	3.525

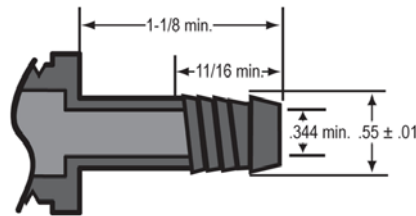
**Dimensions of Polyethylene Pipe  
ASTM D 2104 and D 2239**

Nominal Size in.	Average I.D. in.	Tolerance in.
1/2	.622	+.010 - .010
3/4	.824	+.010 - .015
1	1.049	+.010 - .020
1-1/4	1.380	+.010 - .020
1-1/2	1.610	+.015 - .020
2	2.067	+.015 - .020
2-1/2	2.469	+.015 - .025
3	3.068	+.015 - .030
4	4.026	+.015 - .035

### Insert Fittings Dimensions

- G** = (LAYING LENGTH) Intersection of center lines to insert bottom or thread bottom; 90° elbows, tees & crosses; ± 1/32 inch.
- H** = Intersection of center lines to end of insert or face of fitting; 90° elbows, tees & crosses; ± 1/32 inch.
- L** = Overall length of fittings; ± 1/16 inch.
- N** = (LAYING LENGTH) Insert bottom to insert bottom; couplings & straight adapters; ± 1/16 inch.

### Dimensions of Spiral Barb Ends



## STANDARDS & SPECIFICATIONS

#### • ASTM D 2609

Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe.



#### National Sanitation Foundation (NSF®)

Standard 14 Plastic Fittings for Potable Water.

#### • Material

Spears® Insert Fittings are produced from PVC Type 1, Minimum Cell Classification 12454. CPVC Minimum Cell Classification 23447.

It is the users responsibility to determine the suitability for the intended service application.