



## Appendix D - Recommendations for Installers & 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 a quality grade of primer and solvent cement formulated for the type of connection, with the CORRECT SIZE APPLICATOR. Read and follow all of the solvent cement MANUFACTURER'S APPLICATION AND CURE TIME INSTRUCTIONS THOROUGHLY.

**BEFORE APPLYING PRIMER AND CEMENT**, appropriate safety precautions should be taken. Primer and Cement should be stored in the shade between 40°F and 110°F. Eliminate all ignition sources. Avoid breathing of vapors. Use only with adequate ventilation; explosion-proof general mechanical ventilation or local exhaust is recommended to maintain vapor concentrations below recommended exposure limits. In confined or partially enclosed areas, a NIOSH-approved organic vapor cartridge respirator with full face-piece is recommended. Containers should be kept tightly closed when not in use, and covered as much as possible when in use. Avoid frequent contact with skin; wearing PVA coated protective gloves and impervious apron are recommended. Avoid any contact with eyes; splash proof chemical goggles are recommended.

**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® BLUE 75™ Thread Sealant 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 OVER TIGHTENING will cause DAMAGE TO BOTH PIPE AND FITTING.

**NOTE:** DO NOT use any thread sealants on Spears® Gasket Sealed Threaded connections.

### IMPORTANT

**WATER HAMMER** - Spears® Manufacturing Company recommends that all PVC and CPVC plastic piping systems be designed and constructed to AVOID EXCESSIVE WATER HAMMER. Water hammer can cause damage, and failure to pipe, valves, and fittings within the piping system. PLEASE NOTE - When temperatures rise above 73°F, the tensile strength of thermoplastics decreases, thereby derating the pipe or fitting Maximum Internal Pressure. When temperatures fall below 73°F, the tensile strength of thermoplastics increases, however, the impact strength decreases. Maximum operating temperatures for PVC piping systems should not exceed 140°F. Maximum operating temperatures for CPVC pressure piping systems should not exceed 200°F. Special drainage systems such as Spears® LabWaste™ CPVC Corrosive Waste Drainage System may be used intermittently to 230° F for intermittent non-pressure laboratory drainage application - see LabWaste™ technical information. Spears® Manufacturing Company will not accept responsibility for damage or impairment of its products, or other consequential or incidental damages caused by misapplication, incorrect assembly, and/or exposure to harmful substances or conditions.

### NOT FOR DISTRIBUTION OF COMPRESSED AIR OR GASES

**WARNING:** DO NOT USE ANY PVC OR CPVC THERMOPLASTIC PIPING PRODUCT OR SYSTEM, FOR DISTRIBUTION OR STORAGE OF COMPRESSED AIR OR GASES. THESE PRACTICES MAY RESULT IN EXPLOSIVE FRAGMENTATION OF SYSTEM PIPING AND COMPONENTS CAUSING SERIOUS OR FATAL BODILY INJURY. PVC and CPVC products MAY be used in certain low pressure (i.e. 3-5 psi) air handling applications of oil-free, compatible clean air. Contact Spears® Technical Services with application specifics for additional information.

Not all of the products listed in this price schedule are carried in Spears® Regional Distribution Center inventories. When ordering, please check with your servicing Regional Distribution Center for availability. ALL ORDERS FOR NON-STOCKED products are NON-CANCELABLE and NON-RETURNABLE.

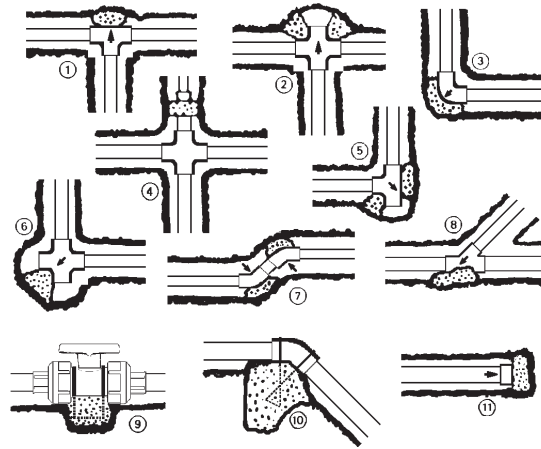
**PRODUCTS IN THIS CATALOG ARE ONLY TO BE USED FOR THEIR INTENDED PURPOSE.**

**THRUST BLOCKING**—Water under pressure exerts thrust forces in piping systems. Thrust blocking should be provided, as necessary, to prevent movement of pipe or appurtenances in response to thrust.

**Types Of Thrust Blocking:**

If thrusts due to high pressure are expected, anchor valves as below. At vertical bends anchor to resist outward thrusts.

1. Thru line connection, tee
2. Thru line connection, cross used as tee
3. Direction change, elbow
4. Change line size, reducer
5. Direction change, tee used as elbow
6. Direction change, cross used as elbow
7. Direction change
8. Thru line connection, wye
9. Valve anchor
10. Direction change vertical, bend anchor
11. End Caps (above or below ground)



**Thrust Blocking Is Required Wherever The Pipeline:**

- \* Changes direction (e.g., tees, bends, elbows and crosses)
- \* Changes size at its reducers
- \* Stops, as at dead ends
- \* Valves and hydrants, at which thrust develops when closed.

**Size And Type Of Thrust Blocking Depends On:**

- \* Maximum system pressure
- \* Pipe size
- \* Type and size of fittings or appurtenance
- \* Line profile (horizontal or vertical bends)
- \* Soil type