



# Submittal Information for Spears® Manufacturing Company PVC Low Extractable (LE) High Purity Piping System

GSLE-1021

Date: \_\_\_\_\_

Job Name: \_\_\_\_\_ Location: \_\_\_\_\_

Engineer: \_\_\_\_\_ Contractor: \_\_\_\_\_

**Scope:**

This submittal covers the Spears® PVC Low Extractable (LE) High Purity Piping System which is sold as a complete system and consists of pipe, fittings, valves and a specially formulated one-step solvent cement for use in high purity water and chemical applications where the application operating temperature does not exceed 140° F (63°C).

**Product Specification:**

Spears® PVC Low Extractable (LE) High Purity Piping System fittings shall be manufactured in the U.S.A. from a specialty low-extractable, Polyvinyl Chloride (PVC) Type II compound with a minimum cell classification of 12343 in accordance with ASTM D1784. All Spears® PVC Low Extractable fittings shall be produced to Schedule 80 dimensions, manufactured in strict compliance to applicable sections of ASTM D2467. Spears® PVC Low Extractable high purity process piping shall be manufactured in the U.S.A. from a specialty low-extractable, Polyvinyl Chloride (PVC) compound with a minimum cell classification of 12343 in accordance with ASTM D1784. All pipe shall be manufactured in the U.S.A. to Schedule 80 dimensions in strict compliance to applicable sections of ASTM D1785. All Spears® PVC Low Extractable valves shall be manufactured in the U.S.A. Spears® Low-Extractable material shall meet the toxicological requirements of NSF International Standard 61 as being safe for use in potable water applications, and also complies with the provisions of Title 21 of the United States FDA Code of Federal Regulations as being safe for use in food contact applications. True Union-style diaphragm and True Union-style ball check and quarter-turn ball valves shall be produced from a specialty low-extractable, Polyvinyl Chloride (PVC) compound with a Cell Classification of 12343 in accordance with ASTM D1784. All valve diaphragms and seats shall be EPDM backed PTFE; valve O-rings shall be EPDM or FKM as applicable. All valve union nuts shall have buttress-style threads. All valve components shall be replaceable. Cement (LX-5) shall be manufactured in the U.S.A. as one-step, primerless, specially formulated for use in high purity applications. All Spears® PVC Low Extractable pipe, fittings and valves shall be bagged and sealed immediately after manufacture to maintain cleanliness, and boxed and stored indoors at the manufacturing facility until shipped from the factory.

Valve Pressure Ratings @ 73° F  
Ball Valve (½ - 4inch) = 235psi  
Ball Check Valve (½ - 4inch) = 235psi  
Diaphragm Valve (½ - 2inch) = 150psi

**Product Marking:**

Spears® PVC Low Extractable pipe, fittings and valves shall be provided in a dark blue pigmented material for purposes of identification as a high purity PVC piping system. All fittings shall have markings engraved on them as required by ASTM D2467.

**Installation:**

Installation practices such as pipe support spacing, bracing, allowance for thermal expansion/contraction, solvent cementing and handling and storage shall be in accordance with the manufacturer’s instructions and this specification. Buried pipe shall be in accordance with ASTM D2774. The piping system shall be joined using a specially formulated one-step solvent cement joining process conforming to ASTM F2564. The system shall be protected from ultra violet (UV) light exposure from the sun or other source and protected from any chemicals that are not compatible with the PVC materials including but not limited to fire stopping materials, plasticizers, incompatible thread sealants etc.

**NOTE:** PVC piping systems are suitable for oil-free air handling to 25 psi, not for distribution of compressed air or gas.

**Referenced Standards:**

- ASTM D1784 – Rigid Vinyl Compounds
- ASTM D1785 – PVC Pipe Schedule 40-80-120
- ASTM D2467 – PVC Schedule 80 Fittings
- ASTM D2564 – Solvent Cements for PVC Pipe & Fittings
- ASTM D2774 – Procedures for Buried Plastic Pipe
- NSF International Standard 61 for Potable Water
- FDA Title 21 - Code of Federal Regulations for food contact

**Features:**

Lightweight • Low Extractable Material • Long Service Life

**PROJECT APPROVAL**

Approved: \_\_\_\_\_  
PRINT

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

