



# PVC SCHEDULE 40 FITTINGS

40-2-0604

## Performance Engineered & Tested



SPEARS® Schedule 40 PVC fitting designs combine years of proven experience with computer generated stress analysis to yield the optimum physical structure and performance for each fitting. Material reinforcement is uniformly placed in stress concentration areas for substantially improved pressure handling capability. Resulting products are subjected to numerous verification tests to assure the very best PVC fittings available.

### Full 1/4" Through 12" Availability

Spears® comprehensive line of PVC fittings offers a variety of injection molded configurations in Schedule 40 sizes 1/4" through 12" conforming to ASTM D 2466.

### Exceptional Chemical & Corrosion Resistance

Unlike metal, PVC fittings never rust, scale, or pit, and will provide many years of maintenance-free service and extended system life.

### High Temperature Ratings

PVC thermoplastic can handle fluids at service temperatures up to 140°F (60°C), allowing a wide range of process applications, including corrosive fluids.

### Lower Installation Costs

Substantially lower material costs than steel alloys or lined steel, combined with lighter weight and ease of installation, can reduce installation costs by as much as 60% over conventional metal systems.

### Higher Flow Capacity

Smooth interior walls result in lower pressure loss and higher volume than conventional metal fittings.

### Additional Fabricated Configurations through 36"

Extra large, hard-to-find, and custom configurations are fabricated from NSF Certified pipe. Fittings are engineered and tested to provide full pressure handling capabilities according to Spears® specifications.

### PVC Valves

SPEARS® PVC Valve products are available for total system compatibility and uniformity; see SPEARS® THERMOPLASTIC VALVES PRODUCT GUIDE & ENGINEERING SPECIFICATIONS (V-4).

### Advanced Design Specialty Fittings

Spears® wide range of innovative, improved products include numerous metal-to-plastic transition fittings and unions with Spears® patented special reinforced (SR) plastic threads.

### Sample Engineering Specifications

All PVC Schedule 40 fittings shall be produced by Spears® Manufacturing Company from PVC Type I cell classification 12454, conforming to ASTM D 1784. All injection molded PVC Schedule 40 fittings shall be Certified for potable water service by NSF International and manufactured in strict compliance to ASTM D 2466. All fabricated fittings shall be produced in accordance with Spears® General Specifications for Fabricated Fittings.



**PROGRESSIVE PRODUCTS FROM SPEARS® INNOVATION & TECHNOLOGY**

Visit our web site: [www.spearsmfg.com](http://www.spearsmfg.com)

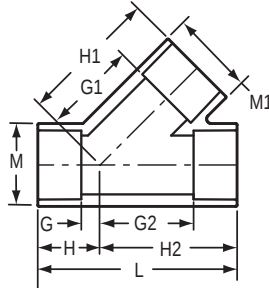


# PVC WHITE SCHEDULE 40 FITTINGS UNIONS & SADDLES

## WYE

Socket x Socket x Socket

Pressure Rating  
 1/2" -2" 235 psi @ 73°F  
 2-1/2" -6" 150 psi @ 73°F  
 8" & Up 100 psi @ 73°F



| Part Number          | Size  | G       | G1       | G2       | H        | H1       | H2       | L        | M        | M1       | Approx. Wt. (Lbs.) |
|----------------------|-------|---------|----------|----------|----------|----------|----------|----------|----------|----------|--------------------|
| 475-005              | 1/2   | 1/4     | 1-3/16   | 1-3/16   | 1-1/8    | 2-1/16   | 2-1/16   | 3-3/16   | 1-5/32   | 1-5/32   | .12                |
| 475-007              | 3/4   | 5/16    | 1-3/8    | 1-3/8    | 1-5/16   | 2-3/8    | 2-3/8    | 3-23/32  | 1-3/8    | 1-3/8    | .18                |
| 475-010              | 1     | 9/32    | 1-13/16  | 1-13/16  | 1-13/32  | 2-15/16  | 2-15/16  | 4-11/32  | 1-23/32  | 1-23/32  | .31                |
| 475-012              | 1-1/4 | 3/8     | 2-1/4    | 2-1/4    | 1-5/8    | 3-1/2    | 3-1/2    | 5-1/8    | 2-1/16   | 2-1/16   | .50                |
| 475-015              | 1-1/2 | 1/2     | 2-19/32  | 2-9/16   | 1-7/8    | 3-31/32  | 3-15/16  | 5-13/16  | 2-11/32  | 2-11/32  | .69                |
| 475-020              | 2     | 19/32   | 3-7/32   | 3-7/32   | 2-1/8    | 4-3/4    | 4-3/4    | 6-7/8    | 2-7/8    | 2-7/8    | 1.20               |
| 475-025 <sup>1</sup> | 2-1/2 | 1-3/16  | 5-1/8    | 4-23/32  | 2-15/16  | 6-7/8    | 6-15/32  | 9-13/32  | 4-3/16   | 4-3/16   | 3.77               |
| 475-030              | 3     | 11/16   | 4-23/32  | 4-1/4    | 2-9/16   | 6-5/8    | 6-1/8    | 8-23/32  | 4-3/16   | 4-3/16   | 2.63               |
| 475-040              | 4     | 1-7/32  | 5-23/32  | 5        | 3-1/2    | 7-31/32  | 7-1/4    | 10-3/4   | 5-1/4    | 5-1/4    | 4.87               |
| 475-050F             | 5     | 3-3/4   | 9-3/8    | 9-3/8    | 6-3/4    | 12-3/8   | 12-3/8   | 19-1/8   | 6-1/16   | 6-1/16   | 13.26              |
| 475-060              | 6     | 1-5/32  | 8-25/32  | 8-3/16   | 4-3/16   | 11-25/32 | 11-3/16  | 15-3/8   | 7-9/16   | 7-9/16   | 12.01              |
| 475-080              | 8     | 1-15/16 | 11-11/32 | 11-11/32 | 5-31/32  | 15-11/32 | 15-11/32 | 21-5/16  | 9-3/4    | 9-3/4    | 25.44              |
| 475-080F             | 8     | 5-5/8   | 14-5/16  | 14-5/16  | 9-7/8    | 18-9/16  | 18-9/16  | 28-7/16  | 9-1/4    | 9-1/4    | 25.46              |
| 475-100              | 10    | 2-1/2   | 16-7/8   | 13-31/32 | 7-1/2    | 22-1/8   | 18-31/32 | 26-15/32 | 11-9/16  | 11-9/16  | 26.92              |
| 475-100F             | 10    | 6-9/16  | 17-1/4   | 17-1/4   | 11-13/16 | 22-1/2   | 22-1/2   | 34-5/16  | 11-1/2   | 11-1/2   | 45.11              |
| 475-120              | 12    | 2-11/16 | 16-1/8   | 16-7/32  | 8-3/4    | 22-7/32  | 22-9/32  | 31-1/32  | 13-21/32 | 13-21/32 | 41.85              |
| 475-120F             | 12    | 7-5/16  | 20-1/16  | 20-1/16  | 13-9/16  | 26-5/16  | 26-5/16  | 39-7/8   | 13-9/16  | 13-9/16  | 63.02              |
| 475-140F             | 14    | 7-3/16  | 21-3/16  | 21-3/16  | 14-3/16  | 28-3/16  | 28-3/16  | 42-3/8   | 14-7/8   | 14-7/8   | 90.24              |
| 475-160F             | 16    | 8-3/4   | 24-3/4   | 24-3/4   | 16-3/4   | 32-3/4   | 32-3/4   | 49-1/2   | 17       | 17       | 93.06              |
| 475-180F             | 18    | 9-7/16  | 27-7/16  | 27-7/16  | 18-7/16  | 36-7/16  | 36-7/16  | 54-7/8   | 19-1/8   | 19-1/8   | 151.20             |
| 475-200F             | 20    | 11-7/16 | 30-5/16  | 30-5/16  | 21-7/16  | 40-5/16  | 40-5/16  | 61-3/4   | 21-3/16  | 21-3/16  | 191.78             |
| 475-240F             | 24    | 11      | 35       | 35       | 23       | 47       | 47       | 70       | 25-3/8   | 25-3/8   | 420.00             |

<sup>1</sup> Outlet sized with bushing

## PVC Thermoplastic Pipe Temperature Pressure De-Rating

To determine the maximum internal pressure rating at an elevated temperature, simply multiply the pipe pressure rating at 73°F by the percentage specified for the desired temperature.

| System Operating Temperature °F (°C) | 73 (23) | 80 (27) | 90 (32) | 100 (38) | 110 (43) | 120 (49) | 130 (54) | 140 (60) |
|--------------------------------------|---------|---------|---------|----------|----------|----------|----------|----------|
| PVC                                  | 100%    | 90%     | 75%     | 62%      | 50%      | 40%      | 30%      | 22%      |

NOTE: Valves, Unions and Specialty Products have different elevated temperature ratings than pipe.

### PVC Basic Physical Properties

| Properties                                | ASTM<br>Test<br>Method | PVC                   |
|-------------------------------------------|------------------------|-----------------------|
| Mechanical Properties, 73°F               |                        |                       |
| Specific Gravity, g/cm <sup>3</sup>       | D 792                  | 1.41                  |
| Tensile Strength, psi                     | D 638                  | 7,200                 |
| Modulus of Elasticity, psi                | D 638                  | 440,000               |
| Compressive Strength, psi                 | D 695                  | 9,000                 |
| Flexural Strength, psi                    | D 790                  | 13,200                |
| Izod Impact, notched, ft-lb/in            | D 256                  | .65                   |
| Thermal Properties                        |                        |                       |
| Heat Deflection Temperature, °F at 66 psi | D 648                  | 165                   |
| Thermal Conductivity, BTU/hr/sq ft/°F/in  | C 177                  | 1.2                   |
| Coefficient of Linear Expansion, in/in/°F | D 696                  | 3.1 X 10 <sup>5</sup> |
| Flammability                              |                        |                       |
| Limiting Oxygen Index, %                  | D 2863                 | 43                    |
| UL 94 rating                              | 94V-0                  |                       |
| Other Properties                          |                        |                       |
| Water Absorption, % 24 hr.                | D 570                  | .05                   |
| Industry Standard Color                   | White / Dark Gray      |                       |
| ASTM Cell Classification                  | D 1784                 | 12454                 |
| NSF Potable Water Approved                | Yes                    |                       |

### PVC Chemical Resistance

PVC is generally inert to most mineral acids, bases, salts and paraffinic hydrocarbon solutions. For more information on PVC chemical resistance refer to the Chemical Resistance of Rigid Vinyls Based on Immersion Test, published by the GEON® Company.

### NOT FOR USE WITH COMPRESSED AIR OR GAS

Spears® Manufacturing Company DOES NOT RECOMMEND the use of thermoplastic piping products for systems to transport or store compressed air or gases, or the testing of thermoplastic piping systems with compressed air or gases in above and below ground locations. The use of our product in compressed air or gas systems automatically voids any warranty for such products, and its use against our recommendation is entirely the responsibility and liability of the installer.

**WARNING:** DO NOT USE COMPRESSED AIR OR GAS TO TEST ANY PVC OR CPVC THERMOPLASTIC PIPING PRODUCT OR SYSTEM, AND DO NOT USE DEVICES PROPELLED BY COMPRESSED AIR OR GAS TO CLEAR SYSTEMS. THESE PRACTICES MAY RESULT IN EXPLOSIVE FRAGMENTATION OF SYSTEM PIPING COMPONENTS CAUSING SERIOUS OR FATAL BODILY INJURY.



### SPEARS® MANUFACTURING COMPANY • CORPORATE OFFICE

15853 Olden St., Sylmar, CA 91342 • PO Box 9203, Sylmar, CA 91392  
(818) 364-1611 • www.spearsmfg.com



#### PACIFIC SOUTHWEST

15860 Olden St.  
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