CPVC SCHEDULE 80 FITTINGS & PIPE

80C-2-1216

Performance Engineered and Tested

SPEARS® EverTUFF® Industrial Schedule 80 CPVC pipe and 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. Spears® EverTUFF® CPVC pipe, fittings and Spears® CPVC solvent cement are Certified lead-free by NSF® International (NSF®) in accordance with ANSI/NSF® 61 and NSF® 372 for compliance with all State & Federal Regulations. Approved by national, state and most municipal building codes and listed by ICC to ASTM E84 for Flame & Smoke Characteristics of less than 25/50 for use in return air plenums (See PMG Listing No. PMG-1278 at www.icc-es-pmg.org) Resulting products are subjected to numerous verification tests to assure the very best CPVC piping products available.

1/4" Through 24" Availability
Spears® comprehensive line of CPVC fittings offers a variety of configurations in Schedule 80 sizes 1/4" through 24".

Injection Molded Through 14"
Spears® Schedule 80 CPVC Fittings are injection molded through IPS size 14".

Exceptional Chemical & Corrosion Resistance
Unlike metal, CPVC fittings never rust, scale or pit, and will provide many years of maintenance-free service and extended system life.

Higher Temperature Ratings
High Temperature CPVC Thermoplastics can handle fluids at service temperatures up to 200°F, allowing a wide range of process applications, including hot corrosive liquids.

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

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.

1/4” Through 24” Industrial Pipe Availability
Spears® premium quality Industrial CPVC pipe is offered in Schedule 80 sizes 1/4” through 24”. Schedule 40 CPVC pipe is also available.

CPVC Valves
SPEARS® CPVC Valve products are available for total system compatibility and uniformity; see VALVES & ACTUATED VALVES IN SPEARS® *SPS-1 PRODUCT SOURCE BOOK & SES-1 ENGINEERING SOURCE BOOK.*

SPEARS® Schedule 80 CPVC 14" Through 24" Fittings & Flanges
Schedule 80 CPVC 14" through 24" fittings are a special engineered product by Spears® Manufacturing Company, where no applicable ASTM specifications exist. Available in a variety of injection molded and fabricated configurations including Flanges, Couplings, Elbows, Bushings and Tees, plus custom fabrication to virtually any configuration.

U.S. Coast Guard Approval
Spears® Complete System of Pipe & Fittings thru 12", meets 2010 FTP code Annex 1, Parts 2 & 5 and may be Installed in Concealed Spaces in Accommodation, Service and Control Spaces without meeting the requirements of 46 CFR 56.60-25 (a) (2). USCG approval #164.141/45/0.

American Bureau of Shipping (ABS) Type Approved Product
Spears® Schedule 40 and Schedule 80 CPVC pipe and fittings are ABS Type Approved for marine and offshore applications in nominal pipe sizes through 12". Type Approval #15-HS1440412-PDM

A Flame & Smoke Rated Piping System
Spears® **EverTUFF®** Industrial pipe and fittings tested dry through 6" have been Listed by ICC-ES PMG 1278 for Compliance with ASTM E84/UL723 Tests for Surface Burning Characteristics having a flame spread of < 25 and a smoke developed index of < 50 meeting the requirements of the International Mechanical Code and Uniform Mechanical Code for use in return air plenums (See PMG Listing No. PMG-1278 at www.icc-es-pmg.org).

Sample Engineering Specifications

All CPVC Schedule 80 pipe and fittings shall be produced by Spears® Manufacturing Company from CPVC materials, minimum cell classification 23447 conforming to ASTM Standard D 1784. All injection molded fittings through 14" shall be manufactured in compliance to ASTM F 439 and all pipe through 24" shall be manufactured in compliance to ASTM F 441. Pipe and fittings shall be Certified by NSF® International for use with potable water service. All 14" through 24" fabricated fittings shall be produced in accordance with Spears® Specifications. All CPVC flanges shall be designed and manufactured to meet CL150 bolt pattern per ANSI Standard B16.5. Pipe and fittings through 6" shall be Listed by ICC for compliance with ASTM E84 Surface Burning Characteristic with flame spread/smoke development of less than 25/50 for use in return air plenums, as manufactured by Spears® Manufacturing Company.

CPVC Thermoplastic Material Temperature Pressure De-rating

Elevated temperature fluid mediums require a de-rating of thermoplastic pipe maximum internal pressure ratings at 73°F. To determine the maximum internal pressure rating at an elevated temperature, simply multiply the product pressure rating at 73°F by the percentage specified for the desired temperature.

System Operating Temperature °F (°C)	73-80 (23-27)	90 (32)	100 (38)	110 (43)	120 (49)	130 (54)	140 (60)	150 (66)	160 (71)	170 (77)	180 (82)	190 (88)	200 (93)	210 (99)
CPVC	100%	92%	82%	77%	65%	62%	50%	47%	40%	32%	25%	22%	20%	-0-

CPVC Typical Physical Properties

Properties	ASTM Test Method	CPVC
Mechanical Properties, 73°F		
Specific Gravity, g/cm^3	D 792	1.55
Tensile Strength, psi	D 638	8,000
Modulus of Elasticity, psi	D 638	360,000
Compressive Strength, psi	D 695	10,100
Flexural Strength, psi	D 790	15,100
Izod Impact, notched, ft-lb / in	D 256	2.9
Thermal Properties		
Heat Deflection Temperature, °F at 66 psi	D 648	217
Thermal Conductivity, BTU / hr / sq ft / °F / in	C 177	.95
Coefficient of Linear Expansion, in / in / °F	D 696	3.2 x 10^{-5}
Flammability		
Limiting Oxygen Index, %	D 2863	60
UL 94 Rating		V-0, 5VB, 5VA
Other Properties		
Water Absorption, % 24 hr.	D 570	.03
Industry Standard Color		Medium Gray
ASTM Cell Classification	D 1784	23447/24448
NSF® Potable Water Approved		Yes

CPVC Chemical Resistance

Weak acids	Excellent
Strong acids	Excellent
Weak bases	Excellent
Strong bases	Excellent
Salts	Excellent
Aliphatic Solutions	Good
Halogens	Good-Fair
Strong Oxidants	Good-Fair

CPVC is not recommended for continuous or pressure use with chlorinated or aromatic hydrocarbons, esters, or polar solvents such as ketones.

NOT FOR DISTRIBUTION OF COMPRESSED AIR OR GASES

LPCB LOSS PREVENTION CERTIFICATION BOARD — UKAS MANAGEMENT SYSTEMS 007

Assessed to ISO 9001: 2008
Certificate number 293

ABS TYPE APPROVED PRODUCT

SPEARS® MANUFACTURING COMPANY
CORPORATE OFFICE
15853 Olden St., Sylmar, CA 91342 • PO Box 9203, Sylmar, CA 91392
(818) 364-1611 • www.spearsmfg.com

MADE IN THE USA WITH PRIDE

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