LabWaste™ CPVC Technical Information & Installation Guide

Additional LabWaste™ Publications

Spears® **LabWaste**™ CPVC Corrosive Waste Drainage Systems – Price Schedule	LW-1
Spears® **LabWaste**™ CPVC Corrosive Waste Drainage Systems – General Data Sheet	LW-2
Spears® **LabWaste**™ Standard CPVC & HDPE Neutralization Tanks – Price Schedule (Includes technical information)	LWNT-1

This manual provides basic technical information, dimensions and installation guidelines for Spears® **LabWaste**™ CPVC Corrosive Waste Drainage Systems that are designed for commercial, industrial, and institutional drainage system applications. This unique product developed by Spears® has been awarded a U.S. Patent, No. 7,178,557 and is manufactured to ASTM F 2618 *Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems* developed for this system. Spears® **LabWaste**™ CPVC Corrosive Waste Drainage Systems carries a limited Lifetime Warranty. Please refer to the above publications or contact Spears® Technical Services for additional information not covered.

Laboratory Applications

Its broad range of resistance to chemical and corrosive wastes make Spears® **LabWaste**™ CPVC systems very well suited for commercial, institutional and academic laboratory drainage installations. These applications are best characterized as the routine disposal of a wide variety of hot and cold chemicals in relatively small quantities accompanied by water for the purpose of dilution and flushing. Due to the interactions potentially encountered in multi-chemical laboratory drainage disposal, Spears® recommends routine flushing of the system with water during disposal as a part of prudent laboratory practices. A properly designed and installed **LabWaste**™ CPVC system provides total dilution and disposal need for years of dependable service.

Industrial & Commercial Special Waste Applications

Spears® **LabWaste**™ CPVC products can be used in a very broad variety of dedicated waste applications with proper evaluation of waste medium and service conditions. **DO NOT** follow Chemical Resistance Tables recommendations in this manual for these applications. For non-laboratory applications, refer to CPVC pressure system resistance data for appropriate chemical resistance guidelines. Please contact Spears® Technical Services for additional information.

Chemical Resistance Overview

Spears® **LabWaste**™ CPVC systems are inert to most mineral acids, bases, salts and aliphatic hydrocarbons, and compares favorably to other non-metals in these chemical environments.

General Chemical Resistance Overview:

Weak Acids	Excellent	Salts	Excellent
Strong Acids	Excellent	Aliphatic Solutions	Good
Weak Bases	Excellent	Halogens	Good-Fair
Strong Bases	Excellent	Strong Oxidants	Good-Fair

Refer to *Chemical Resistance Information* section at the end of this manual for Chemical Resistance Tables and additional information and detail.

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Applicable Conformance Standards & Certifications

Spears® **LabWaste™** CPVC Corrosive Waste Drainage System is a complete system of pipe, fittings and solvent cement independently (3rd party) tested, evaluated and certified by the following laboratories and agencies. Each of these approvals is routinely monitored through an ongoing program of periodic inspection and testing by the certifying agency.

- **ASTM F 2618** - Certified for corrosive waste end use by NSF® International (NSF® cw) in accordance with ASTM F 2618, *Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems.*

- **Uniform Plumbing Code** - Certified for use in accordance with the Uniform Plumbing Code (UPC) by NSF® International as specified in IAPMO IGC 210, *Interim Guide Criteria for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Limited Chemical Waste Drainage System.* (NSF-U.P.Code).

- **International Plumbing Code** - Approved for use in accordance with the International Plumbing Code (IPC) by the International Codes Council Evaluation Services (ICC - ES) in accordance with ICC - ES PMG Listing PMG - 1018 for Spears® LabWaste™ CPVC Corrosive Waste Drainage System (See ICC - ES PMG Listing PMG-1018 at www.icc-es-pmg.org.)

Typical Physical Properties of Spears® LabWaste™ CPVC Material

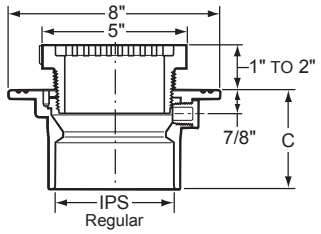
Property	Test Method	Typical Value
Mechanical Properties @ 73° F		
Specific Gravity	ASTM D 792	1.49
Tensile Strength, psi	ASTM D 638	9000
Tensile Modulus, psi	ASTM D 638	420,000
Flexural Strength	ASTM D 790	12,000
Izod Impact (notched @73° F)	ASTM D 256	
Fittings		3.0
Pipe		5.5
Thermal Properties		
Heat Deflection Temperature 264 psi	ASTM D 648	
Fitting		214° F
Pipe		230° F
Thermal Conductivity, BTU/hr/sq ft/° F/in	ASTM C 177	.95
Coefficient of Linear Expansion, in/in/° F	ASTM D 696	3.2 x 10^{-5}
Flammability		
Limiting Oxygen Index	ASTM D 2863	60
UL 94 Rating	UL 94	V-0, 5VB
Flame & Smoke Rating[1]		
Flame Spread	CAN/ULC S 102.2	<25
Smoke Developed	UL 723/ASTM E 84	<50
Solvent Cement	ASTM F 2618/ASTM F 493	Heavy Body; Mustard Yellow Color

Typical Physical Properties data is based on information from material suppliers. It is provided as a guideline for service and is not to be considered a warranty of performance.
1- Based on test of physical product, including solvent cement welded pipe and fittings assemblies, as opposed to test of material only.

Fire Resistance

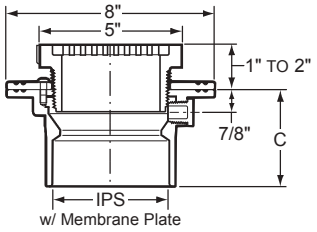
Material used in Spears® **LabWaste™** CPVC systems has a UL 94 flammability rating of V-0, 5VB. Pipe and fittings have been Listed and rated based on *finished product* tests, as opposed to a material test only, for surface burning characteristics of flame spread and smoke density developed by Underwriters Laboratories of Canada under standard test method CAN/ULC S102.2-M88. Additional test of **LabWaste™** pipe with dry fit caps was conducted by Southwest Research Institute (SwRI) Department of Fire Technology under UL 723/ASTM E 84 (modified to test finished product). Pipe and fitting components ratings are below the 25 maximum flame spread and 50 maximum smoke density developed typically required for exposed air plenum installation. Check local codes for acceptability. Use of approved plenum wrap or transition connectors to other material may be used if required.

LW1500 Floor Drain with CPVC Adjustable Top w/5" Round Grate



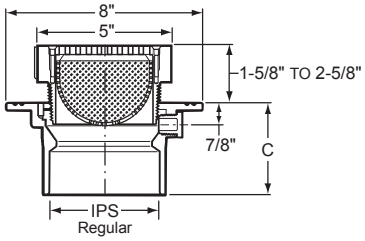
Part Number Regular	Size	IPS	C
LW1500-015C	1-1/2x5	1-1/2	4-3/16
LW1500-020C	2x5	2	4
LW1500-030C	3x5	3	4
LW1500-040C	4x5	4	3-3/4

LW150M Floor Drain with CPVC Adjustable Top w/5" Round Grate & Membrane Collar



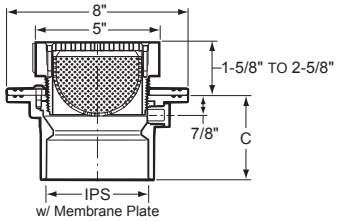
Part Number Membrane Plate	Size	C
LW150M-015C	1-1/2x5	4-3/16
LW150M-020C	2x5	4
LW150M-030C	3x5	4
LW150M-040C	4x5	3-3/4

LW1520 Floor Drain with CPVC Adjustable Top w/5" Round Grate & Strainer



Part Number	Size	IPS	C
LW1520-015C	1-1/2x5	1-1/2	4-3/16
LW1520-020C	2x5	2	4
LW1520-030C	3x5	3	4
LW1520-040C	4x5	4	3-3/4

LW152M Floor Drain with CPVC Adjustable Top w/5" Round Grate, Strainer & Membrane Collar



Part Number Regular	Size	IPS	C
LW152M-015C	1-1/2x5	1-1/2	4-3/16
LW152M-020C	2x5	2	4
LW152M-030C	3x5	3	4
LW152M-040C	4x5	4	3-3/4