

# SUBMITTAL FOR CHARLOTTE PIPE® CHEMDRAIN® CPVC CHEMICAL WASTE SCHEDULE 40 PIPE AND FITTINGS

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

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

Location: \_\_\_\_\_

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

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

**► Scope:**

This specification covers CPVC Schedule 40 pipe and fittings for chemical waste drain applications. ChemDrain is intended for use in non-pressure drain applications where the temperature will not exceed 220°F.

**► Specification:**

Pipe and fittings shall be manufactured as a system, be the product of one manufacturer and be manufactured in the United States. All pipe, fittings, and solvent cement shall be supplied together as a system, as Charlotte Pipe ChemDrain chemical waste system manufactured by Charlotte Pipe and Foundry. Pipe and fittings shall conform to the National Sanitation Foundation Standard (NSF) 14.

Special drainage systems for corrosive chemical or acid waste shall be manufactured by CPVC Type IV, Grade I, ASTM Cell Class 23447. All system components shall be certified by NSF International for use in chemical waste drainage systems and bear the mark NSF-cw. All system piping shall be Schedule 40 CPVC produced to the dimensional requirements of ASTM F 2618 and the manufacturer's specifications. All pipe and fittings shall be CPVC drainage patterns meeting the requirements of ASTM F 2618 and the manufacturer's specifications, as applicable.

**► Installation:**

Installation shall comply with the latest installation instructions published by Charlotte Pipe and Foundry and shall conform to all applicable plumbing, fire, and building code requirements. Buried pipe shall be installed in accordance with ASTM D 2321 and ASTM F 1668. Solvent welded joints shall be made with ChemDrain One-Step solvent cement conforming to ASTM F 493. The system shall be protected from items that are not compatible with CPVC compounds; materials like thread sealants, plasticized vinyl products, fire stopping devices, or other aggressive chemical agents. System shall be hydrostatically tested after installation. **WARNING!** Use of compressed air or gas in CPVC pipe or fittings can result in explosive failures and cause severe injury or death.

**► Referenced Standards:**

- ASTM D 1784 Rigid CPVC Vinyl Compounds
- ASTM D 2321 Underground Installation of Thermoplastic Pipe (non-pressure applications)
- ASTM F 493 Solvent Cements for CPVC Pipe and Fittings
- ASTM F 1668 Procedures for Buried Plastic Pipe
- ASTM F 2618 Standard for Chlorinated Poly (Vinyl Chloride) Chemical Waste Drainage Systems
- NSF Standard 14 Plastic Piping Components and Related Materials



Quarter Bend      Cleanout Tee w/Plug      Sixteenth Bend

Wye      Sanitary Tee      Jar Trap with Tail Piece Adapter      Transitional Coupling

**ChemDrain® CPVC Pipe**

**ChemDrain® CPVC Schedule 40 Pipe** NSF  
**Type IV, Grade 1** ASTM F 2618

CPVC SCHEDULE 40 (LIGHT GRAY)			PLAIN END		CPVC 4120	
PART NO.	NOM. SIZE	UPC # 611942-	QTY. PER SKID	AVG. OD (IN.)	MIN. WALL (IN.)	WT. PER 100 FT. (LBS.)
AW 14015	1 1/2" x 10'	10732	1650'	1.900	.145	55.3
AW 14002	2" x 10'	10733	1110'	2.375	.154	74.3
AW 14003	3" x 10'	10734	1130'	3.500	.216	154.2
AW 14004	4" x 10'	10735	670'	4.500	.237	219.6
AW 14006	6" x 10'	10736	330'	6.625	.280	386.1
AW 14008	8" x 10'	11363	180'	8.625	.322	581.1

One-Step CPVC Solvent Cement

Charlotte Pipe and Foundry Company • P.O. Box 35430 Charlotte, NC 28235 • (800) 438-6091 • www.charlottepipe.com

# Product Certification



This is to certify that all Plastic Pipe and Fittings manufactured by Charlotte Pipe and Foundry Company are manufactured in the United States and conform to the following standards:

## **PVC SCH. 40 SOLID WALL PIPE**

ASTM D 1784, ASTM D 1785, ASTM D 2665  
FHA UM 79a  
FEDERAL SPECIFICATION L-P-320a  
NSF STANDARD 14 AND 61

## **PVC SCH. 40 DWV CELLULAR CORE PIPE**

ASTM D 4396, ASTM F 891  
NSF STANDARD NO. 14

## **PVC SCH. 40 DWV FITTINGS**

ASTM D 1784, ASTM D 2665, ASTM D 3311,  
ASTM F1866  
FHA UM 79a  
FEDERAL SPECIFICATION L-P-320a  
NSF STANDARD NO. 14

## **PVC SDR-21 AND SDR-26 PRESSURE PIPE**

ASTM D 1784, ASTM D 2241  
NSF STANDARD NO. 14 AND 61

## **PVC SCH. 40 PRESSURE FITTINGS**

ASTM D 1784, ASTM D 2466  
NSF STANDARD 14 AND 61

## **PVC SCH. 40 WELL CASING PIPE**

ASTM D 1784, ASTM F 480  
NSF STANDARD NO. 14 AND 61

## **PVC SCH. 80 PIPE**

ASTM D 1784, ASTM D 1785  
NSF STANDARD NO. 14 AND 61

## **PVC SCH. 80 FITTINGS**

ASTM D 1784, ASTM D 2467  
ASTM D 2464 ASTM F 1970  
NSF STANDARD NO. 14 AND 61

## **PVC SDR 35 SEWER MAIN PIPE**

ASTM D 1784, ASTM D 3034, SDR 35  
ASTM D 3212, ASTM F 477

## **PVC SEWER AND DRAIN PIPE**

ASTM D 1784, ASTM D 2729

## **PVC THIN WALL PIPE & FITTINGS**

ASTM D 1784, ASTM D 2949  
NSF STANDARD NO. 14

## **CPVC FLOWGUARD GOLD® CTS PIPE & FITTINGS**

ASTM D 1784, ASTM D 2846  
FHA UM-61a  
NSF STANDARD NO. 14 AND 61  
CSA LISTED ON SPECIFIED ITEMS

## **CPVC CHEMDRAIN® SCH. 40 PIPE & FITTINGS**

ASTM D 1784, ASTM F 2618  
NSF STANDARD 14

## **ABS SCH. 40 DWV CELLULAR CORE PIPE**

ASTM D 3965, ASTM F 628  
NSF STANDARD NO. 14

## **ABS PLUS® SCH. 40 DWV CELLULAR CORE PIPE**

ASTM D 3965, ASTM D 4396, ASTM F 1488

## **ABS SCH. 40 DWV FITTINGS**

ASTM D 3965, ASTM D 2661, ASTM D 3311  
FHA UM 79a  
FEDERAL SPECIFICATION L-P-322b  
NSF STANDARD NO. 14

CHARLOTTE PIPE AND FOUNDRY COMPANY

## Product Certification

ChemDrain® CPVC chemical waste system is a complete system of pipe, fittings, solvent cement and accessories. Charlotte Pipe and Foundry CPVC pipe and fittings are listed for chemical waste systems by NSF International and bear the mark NSF-cw. For additional information log on to [www.nsf.org](http://www.nsf.org).

### Physical Properties of CPVC Material

PROPERTY	CPVC 4120	UNITS	STANDARD
<b>Mechanical Properties</b>			
Specific Gravity	1.55		ASTM D 792
Tensile Strength (73°F)	7,000	psi	ASTM D 638
Modulus of Elasticity in Tension (73°F)	360,000	psi	ASTM D 638
Flexural Strength (73°F)	15,100	psi	ASTM D 790
Izod Impact Cell Class 23447 (notched at 73°F) Min.	1.5 Fittings	ft lb/ in.	ASTM D 256
Hardness (Durometer D)	–		ASTM D 2240
Hardness (Rockwell R)	119		ASTM D 785
Compressive Strength (73°F)	10,100	psi	ASTM D 695
Hydrostatic Design Stress	2,000	psi	
<b>Thermal Properties</b>			
Heat Distortion Temperature at 264 psi Minimum	212°F (Cell Class 23447)	degrees F	ASTM D 648
Coefficient of Thermal Conductivity	.95	BTU/ hr/sq ft/ °F/ in.	ASTM C 177
Coefficient of Linear Expansion	3.4 x 10 <sup>-5</sup>	in./ in./ °F	ASTM D 696
Specific Heat	0.34	BTU/lb°F	ASTM D 2766
Water Absorption (24 hrs at 73°F)	.03	% weight gain	ASTM D 570
Cell Classification	23447-Pipe and Fittings		ASTM D 1784
<b>Flammability</b>			
Limiting Oxygen Index	60%		ASTM D2883
Burning Rate	Self Extinguishing		ASTM D 635
Burning Class	V-0		UL 94
<b>Flame &amp; Smoke Rating<sup>1</sup></b>			
	Flame Spread	0	CAN/ULC S 102.2
	Smoke Developed <sup>2</sup>	8-22	
Solvent Cement	Heavy Body, Mustard Yellow Color		ASTM F 493

Above data is based upon information provided by the raw material manufacturers. It should be used only as a recommendation and not as a guarantee of performance.

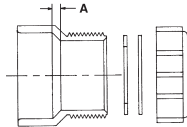
<sup>1</sup> Based on test of physical product, as opposed to test of material only. Test was conducted on 1½" - 6" pipe.

<sup>2</sup> Results vary based on pipe diameter.

**PART NO. AW 104RC**

**Trap Adapter-Female**  
with 1 1/2" Plastic Nut and Washer  
HUB X SLIP WITH PLASTIC NUT

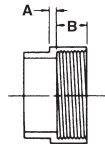
SIZE	A
1 1/2	3/16



**PART NO. AW 105XC**

**Fitting Cleanout Adapter**  
with Cleanout Plug (See AW 106C Dimensions)  
SPIGOT X FPT

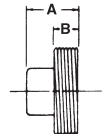
SIZE	A	B
1 1/2	5/32	5/8
2	5/32	5/8
3	7/32	3/4
4	1/4	7/8
6	5/16	1 7/16



**PART NO. AW 106C**

**Cleanout Plug**  
MPT

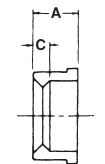
SIZE	A	B
1 1/2	1 3/8	5/8
2	1 3/8	5/8
3	1 3/4	3/4
4	1 7/8	7/8
6	2	1



**PART NO. AW 107C**

**Flush Bushing**  
SPIGOT X HUB

SIZE	A	C
2 x 1 1/2	1 1/16	5/16
3 x 1 1/2	1 3/4	1
3 x 2	1 3/4	7/8
4 x 2	2	1 1/8
4 x 3*	1 51/64	1/4
6 x 3	3 13/32	1 57/64
6 x 4	3 1/2	1 3/4
8 x 4	4 5/8	2 7/8
8 x 6	4 9/16	1 5/8

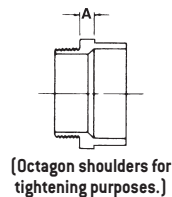


\* 4 x 3 differs slightly in appearance

**PART NO. AW 109C**

**Male Adapter**  
MPT X HUB  
(Note: Not a trap adapter. Will not accept a tail piece.)

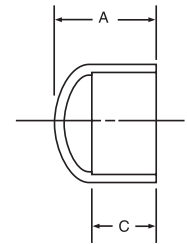
SIZE	A
1 1/2	3/16
2	3/16
3	3/8
4	3/8



**PART NO. AW 116C**

**Cap**  
SOCKET

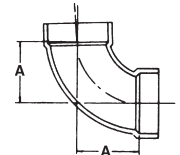
SIZE	A	C
1 1/2	1 15/16	1 5/16
2	2 5/32	1 3/8
3	2 15/16	1 29/32
4	3 1/8	2 1/32



**PART NO. AW 300C**

**1/4 Bend**  
(Sanitary 90° Ell)  
ALL HUB

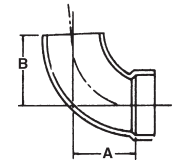
SIZE	A
1 1/2	1 3/4
2	2 5/16
3	3 1/16
4	3 7/8
6	5
8	6



**PART NO. AW 302C**

**1/4 Bend, Street**  
(Sanitary 90° Street Ell)  
SPIGOT X HUB

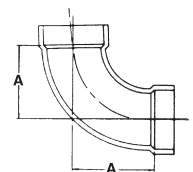
SIZE	A	B
1 1/2	1 3/4	2 1/2
2	2 5/16	3 3/16
3	3 1/16	4 9/16
4	3 7/8	5 5/8
6	5 3/16	8 1/8



**PART NO. AW 304C**

**Long Sweep 1/4 Bend**  
HUB X HUB

SIZE	A
1 1/2	2 3/4
2	3 1/4
3	4 1/16
4	4 15/16



**PART NO. AW 321C**

**1/8 Bend**  
(45° Ell)  
HUB X HUB

SIZE	A
1 1/2	1 1/8
2	1 1/2
3	1 3/4
4	2 3/16
6	2 1/16
8	2 1/16

