Key Construction Services, LLC
4246 Albany Post Rd
Suite 1
Hyde Park, New York 12538
P: +18454541192

Project: 22009- Vails Gate FD- Storage Building PH1 / Fire Station PH2
872 Blooming Grove Turnpike
New Windsor, New York 12553

Submittal #221005-1.0 - PD
221005 - Plumbing Piping

Distribution Summary

Distributed by Christopher Germano (Key Construction Services, LLC) on Apr 11, 2023

To Ronald Lombardo (Joseph Lombardo Plumbing, Heating & Cool), Michael Adorno (Joseph Lombardo Plumbing, Heating & Cool) , Joseph Manfredi (Key Construction Services, LLC), Michele Rood (Joseph Lombardo Plumbing, Heating & Cool)

Message None

Attachments

Name	Response	Attachments	Comments
Emily Fusilero (H2M Architects + Engineers)	No Exceptions Taken	221005-1 - Plumbing Piping PD_KJE.pdf	please see attached

Revision	0	**Submittal Manager**	Christopher Germano (Key Construction Services, LLC)
Status	Closed	**Date Created**	Dec 14, 2022
Issue Date		**Spec Section**	221005 - Plumbing Piping
Responsible Contractor	Joseph Lombardo Plumbing, Heating & Cool	**Received From**	Ronald Lombardo (Joseph Lombardo Plumbing, Heating & Cool)
Received Date	Apr 3, 2023	**Submit By**	Mar 9, 2023
Final Due Date	Apr 17, 2023	**Lead Time**	
		Cost Code	
Location		**Type**	Product Information

Approvers Joseph Manfredi (Key Construction Services, LLC), Emily Fusilero (H2M Architects + Engineers), Katie Margolies (H2M Architects + Engineers)

Ball in Court

Distribution

Description B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

Submittal Workflow

Name	Sent Date	Due Date	Returned Date	Response	Attachments
General Information Attachments					221005 PLUMBING PIPING.pdf
Joseph Manfredi		Apr 3, 2023	Apr 4, 2023	Approved for Review	[OPEN] 221005-1 - Plumbing Piping PD.pdf

Name	Sent Date	Due Date	Returned Date	Response	Attachments
Emily Fusilero	Apr 4, 2023	Apr 17, 2023	Apr 10, 2023	No Exceptions Taken	221005-1 - Plumbing Piping PD_KJE.pdf (Current)
Comment	please see attached				
Katie Margolies	Apr 4, 2023	Apr 17, 2023		Pending	

SUBMITTAL REVIEW

CLIENT NAME: Vails Gate Fire Department

PROJECT TITLE: Vails Gate FD - New Firehouse

SUBMITTAL No.: 221005-1 **H2M PROJECT No.:** VGFD2001

SUBMITTAL NAME: Plumbing Piping PD

SUBMITTAL REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS.
NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS
OF DIMENSIONS OR DETAILS

- [x] NO EXCEPTIONS TAKEN
- [ ] SUBMIT SPECIFIED ITEM
- [ ] MAKE CORRECTIONS NOTED (RESUBMISSION NOT REQUIRED)
- [ ] NO ACTION TAKEN (REVIEW IS THE RESPONSIBILITY OF ANOTHER PARTY)
- [ ] REVISE & RESUBMIT
- [ ] NO ACTION TAKEN (THIS SUBMITTAL IS NOT REQUIRED BY THE CONTRACT)
- [ ] REJECTED - SEE REMARKS
- [ ] RECEIVED FOR RECORD

Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating their work with that of all other trades; and performing the work in a safe and satisfactory manner.

H2M architects + engineers

Date: 04/07/2023 By: KJE

Rev.: 2020-05-20

Comments:

CONTRACTOR'S COMPANY NAME
ADDRESS

SUBMISSION TRANSMITTAL FORM
CLIENT NAME: Vails Gate Fire District
PROJECT TITLE: VGFD2001-New Firehouse

H2M PROJECT NO.: VGFD2001

Product, Item, or System Submitted:	Plumbing Piping Product Data		
Submission Date:	4/4/2023	Submission Log No.:	221005-1
Specification Section:	221005	Paragraph Reference:	1.04.B
Contract Drawing Reference(s):			
Manufacturer's Name:			
Manufacturer's Mailing Address:			
Manufacturer's Contact Information:	*Name*	( ) *Tel. no.*	*Email*
Supplier's Name:	Joseph Lombardo Plumbing & Heating		
Supplier's Mailing Address:			
Supplier's Contact Information:	*Name*	( ) *Tel. no.*	*Email*
This item is a substitution for the specified item:		☑ No	☐ Yes

KEY CONSTRUCTION SERVICES, LLC

Project No: VGFD2001

Reviewed for General Acceptance Only. This review does not relieve the Subcontractors or Suppliers of responsibility for making the work conform to the requirements of the contract. The Subcontractor and Suppliers are responsible for all dimensions, correct fabrication and accurate fit with the work of other trades.

SUBJECT TO ARCHITECT AND OR ENGINEER APPROVAL

Signed *Joseph Manfredi*(PM) **Date: 4/4/2023**

Contractor's Approval Stamp with Signature & Date

Contractor's Brief Comments or Remarks (attach separate letter as needed):

By making this submission, we represent that we have determined and verified all field measurements and dimensions, field construction criteria, site and building constraints in terms of limitations in moving the item into the enclosed space, materials, catalog and model numbers and similar data and that we have checked and coordinated this submission with other work at or adjacent to the installed location in accordance with the requirements contained in the Contract Documents.

END OF SECTION 013300

Joe Lombardo

Plumbing & Heating of Rockland, Inc.

321 Spook Rock Road
Suffern, NY 10901
Ph. 845-357-6537 Fx 845-357-8529
E: info@josephlombardo.com
Website: www.josephlombardo.com

Rockland Cty. Plumbing #1000 *Rockland Cty. Cooling # 1468*
Westchester Cty. Plumbing #460 *New Jersey State Plumbing #12702*

LETTER OF TRANSMITTAL

DATE: 4-3-23	JOB NO.
ATTENTION: Joe Manfredi	
RE: Vails Gate Firehouse	

TO: Key Construction
4246 Albany Post Rd. Suite 1
Hyde Park, NY 12538

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via _____ the following items:

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

EMAIL	DATE	NO.	DESCRIPTION
1	4-3-23	221005	PLUMBING PIPING

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ No Exceptions Taken ☐ Resubmit _____ copies for review
☐ For your use ☐ Make Corrections Noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Rejected ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 20___ ☐ PRINTS RETURNED AFTER LOAN TO US

COPY TO: Joe Manfredi

SIGNED: Ronald J. Lombardo

2.02 SANITARY WASTE PIPING BURRIED WITHIN 5' OF THE BLDG

CHARLOTTE
PIPE AND FOUNDRY COMPANY

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

SERVICE HUB AND SPIGOT PIPE AND FITTINGS
All cast iron pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute (CISPI)
ASTM A 74
ANSI A 112.5.1
Listed by NSF International
ISO 9001:2008

EXTRA HEAVY HUB AND SPIGOT PIPE AND FITTINGS
All cast iron pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute (CISPI)
ASTM A 74
ANSI A 112.5.1
Listed by NSF International
ISO 9001:2008

2.02 - B - PIPE & FITTINGS

NO-HUB PIPE AND FITTINGS
All cast iron pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute (CISPI)
CISPI Standard 301
ASTM A 888
Listed by NSF International
ISO 9001:2008

2.02 - B - PIPING COUPLINGS

NO-HUB COUPLINGS
CISPI Standard 310
ASTM C 1277

NO-HUB HEAVY DUTY COUPLINGS
ASTM C 1540

COMPRESSION GASKETS
ASTM C 564
CISPI HSN 85

Very truly yours,

Hooper Hardison

Hooper Hardison, Executive Vice President

TERRI L. WILSON
NOTARY PUBLIC
Mecklenburg County, North Carolina
My Commission Expires July 2, 2012

Terri L. Wilson

Notary Public
My commission expires July 02, 2012

09/29/2010

PO Box 35430 Charlotte, NC 28235 USA 704/372-5030 800/438-6091 FAX 800/553-1605
www.charlottepipe.com

CHARLOTTE
PIPE AND FOUNDRY COMPANY

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:

>>> **SCH. 40 PVC PIPE**
ASTM D 1784, ASTM D 1785, ASTM D 2665
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD NO. 14 AND 61

SCH. 40 PVC DWV PIPE CELLULAR CORE
ASTM D 4396, ASTM F 891
NSF STANDARD NO. 14

SCH. 40 RePVC™ DWV PIPE
ASTM D 4396, ASTM F 1760
NSF STANDARD NO. 14

>>> **SCH. 40 PVC DWV FITTINGS**
ASTM D 1784, ASTM D 2665, ASTM D 3311
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD NO. 14

PVC PRESSURE PIPE SDR-21 AND SDR-26
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 NO. 14 AND 61

PVC 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, PVC 1120
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 SEWER MAIN PIPE
ASTM D 1784, ASTM D 3034 SDR 35
ASTM D 3212, ASTM F 477

PVC SEWER MAIN PIPE CELLULAR CORE
ASTM D 4396, ASTM F 891 PS 50

PVC SEWER AND DRAIN PIPE
ASTM D 1784, ASTM D 2729

PVC THIN WALL PIPE AND FITTINGS
ASTM D 1784, ASTM D 2949
NSF STANDARD NO. 14

CPVC CTS FLOWGUARD GOLD® PIPE & FITTINGS
ASTM D 1784, ASTM D 2846
FHA UM-61a
NSF STANDARD NO. 14. AND 61
CSA LISTED ON SPECIFIED ITEMS

CPVC CTS REUZE™ PIPE
ASTM D 1784, ASTM D 2846
NSF STANDARD NO. 14.

CHEMDRAIN® CPVC SCHEDULE 40 PIPE AND FITTINGS
ASTM D 1784, ASTM F 2618
NSF STANDARD NO. 14

SCH. 40 ABS DWV PIPE CELLULAR CORE
ASTM D 3965, ASTM F 628
NSF STANDARD NO. 14

SCH. 40 ABS DWV FITTINGS
ASTM D 3965, ASTM D 2661, ASTM D 3311
FHA UM 79a
FEDERAL SPECIFICATION L-P-322b
NSF STANDARD NO. 14

Very truly yours,

Hooper Hardison

Hooper Hardison, Executive Vice President

Terri L. Wilson

Notary Public
My commission expires July 02, 2012

TERRI L. WILSON
NOTARY PUBLIC
Mecklenburg County, North Carolina
My Commission Expires July 2, 2012

5/12/2010

PO Box 35430 Charlotte, NC 28235 USA 704/372-5030 800/438-6091 FAX 800/553-1605
www.charlottepipe.com

Oatey®
4700 W. 160th St.
Cleveland, OH 44135
1-800-321-9532
1-800-321-9535
www.oatey.com
TECHNICAL SPECIFICATION

INDUSTRIAL GRADE PURPLE PRIMER

Quality ISO 9001 System

TECHNICAL SPECIFICATION: Oatey Industrial Grade Purple Primer is an aggressive primer recommended for use with PVC and CPVC pipe and fittings. Purple Primer is specially formulated for use with large diameter pipe and fittings and is ideal for fabrication. This product is compliant with California South Coast Air Quality Management District (SCAQMD) Rule 1168 and Ozone Transport Commission (OTC) regulations for Volatile Organic Compound emission levels. **Note: This product is not for use in a system using or being tested by compressed air or gases.**

Lo-VOC SCAQMD 1168/316A Compliant

INGREDIENTS (CAS Number)

Acetone (67-64-1)
Cyclohexanone (108-94-1)
Methyl Ethyl Ketone (78-93-1)
Red Pigment (N/A)
Tetrahydrofuran (109-99-9)
Violet Pigment (N/A)

LISTINGS

NSF Standard 61 for PW, DWV, SEWER

IAPMO Listed

Meets ASTM Standard F 656

PHYSICAL/CHEMICAL PROPERTIES

Appearance	Purple Liquid
Density	7.15 ± 0.2 lbs/gallon
Shelf Life	3 years from manufacture date

Maximum VOC per SCAQMD 1168/316A or BAAQMD Method 40: 550 g/L

PRODUCT NUMBER	SIZE	PACK	CARTON WEIGHT
30770	16 oz	24	25 lbs.
30771	32 oz.	12	24 lbs.
30772	Gallon	6	45 lbs.

Oatey®
4700 W. 160th St.
Cleveland, OH 44135
1-800-321-9532
1-800-321-9535
www.oatey.com
TECHNICAL SPECIFICATION

INDUSTRIAL GRADE PURPLE PRIMER

Quality ISO 9001 System

DIRECTIONS FOR USE

Read all directions carefully before using this product. • Do not breathe vapors. Use only in well ventilated area. If forced air ventilation is used, be sure it does not cause a fire hazard from solvent vapors. If adequate ventilation cannot be provided, wear a NIOSH-approved respirator for organic solvents. • Do not use or store near heat, sparks, or flames. Do not smoke, eat or drink when using. Do not take internally. Vapors may accumulate in low places and may ignite explosively. • Store and use at temperatures between -15°F and 110°F. • Keep container closed when not in use. • Avoid eye and skin contact - wear safety glasses with side shields and wear rubber gloves. • **HANDLE WITH CARE! WILL STAIN MOST MATERIALS AND SURFACES**. • Do not thin.

1. Square pipe ends and remove all burrs and dirt.
2. Check dry fit of pipe and fitting. Pipe should easily go 1/3 of the way into the fitting. If the pipe bottoms, it should be snug.
3. Use a suitable applicator at least 1/2 the size of the pipe diameter. For larger size pipe systems use a natural bristle brush or roller.
4. Apply thoroughly to outside surface of the pipe to the depth of the fitting and inside of the fitting socket.
5. Use appropriate solvent cement for the pipe being joined. DO NOT TEST WITH AIR.

This product is not for use with caustic or acidic chemical solutions. Consult Oatey Technical Department for more information.

PRECAUTIONS

Read all information carefully before using this product.

DANGER: EXTREMELY FLAMMABLE. VAPORS MAY CAUSE FLASH FIRES. MAY IRRITATE EYES AND SKIN. VAPOR HARMFUL. MAY IRRITATE RESPIRATORY TRACT AND CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. HARMFUL OR FATAL IF SWALLOWED.

May cause irritation to eyes, skin, and nose, throat, and respiratory tract. May cause coughing, sore throat, difficulty breathing, headache, dizziness, nausea. Long term repeated overexposures to solvents may cause damage to the brain, nervous system, reproductive system, respiratory system, mucous membranes, liver, and kidneys. **KEEP OUT OF REACH OF CHILDREN.**
FIRST AID: If swallowed, **DO NOT INDUCE VOMITING.** Drink water and call a doctor or poison control center immediately. This product may be aspirated into the lungs and cause chemical pneumonitis, a potentially fatal condition. If contact with eyes, flush with water for 15 minutes and seek medical attention if irritation persists. If contact with skin, wash with soap and water. If inhaled and ill feelings develop, get fresh air and obtain medical attention if ill feelings persist. **FOR EMERGENCY FIRST AID INSTRUCTIONS CALL 1-877-740-5015.**
FIRE: Use dry chemical, foam, or carbon dioxide extinguisher. Water spray may be applied to reduce potential vapors or for cooling. Burning liquid extinguished with water will float and may re-ignite on surface of water.
SPILLS: Remove all sources of ignition and ventilate area. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with absorbent material. Put absorbent material in covered, labeled metal containers. Dispose of in accordance with local regulations.

A fire or explosion may result if dry granular calcium hypochlorite is used to disinfect plastic piping systems and is exposed to organic vapors found in solvent cements, cleaners or primers. Do not disinfect piping system with dry granules. Do not store dry granular calcium hypochlorite near solvent cements, cleaners or primers. DO NOT REUSE EMPTY CONTAINER. KEEP OUT OF REACH OF CHILDREN.

Refer to material safety data sheet for more information.

Before purchase and use of a product, review the product application and be certain the product, installation and use will be in compliance with any applicable codes and regulations.

Oatey®
4700 W. 160th St.
Cleveland, OH 44135
1-800-321-9532
1-800-321-9535
www.oatey.com

TECHNICAL SPECIFICATION

ALL WEATHER MEDIUM CLEAR PVC SOLVENT CEMENT

TECHNICAL SPECIFICATION: Oatey All Weather Medium Clear PVC Solvent Cement is recommended for solvent welding all schedules and classes of PVC pipe and fittings up to 6" with interference fit. All Weather PVC Solvent Cement will remain free flowing and maintain fast set-up times at temperatures down to -15° F. All Weather PVC Solvent Cement can be used for potable water, sewer and drain, waste and vent systems. This product is compliant with California South Coast Air Quality Management District (SCAQMD) Rule 1168 and Ozone Transport Commission (OTC) regulations for Volatile Organic Compound emission levels. **Note: This product is not for use in a system using or being tested by compressed air or gases.**

Lo-VOC SCAQMD 1168/316A Compliant

INGREDIENTS (CAS Number)

Acetone(67-64-1)
Amorphous Silica (112945-52-5)
Cyclohexanone (108-94-4)
Methyl Ethyl Ketone (78-93-3)
PVC Resin (9002-86-2)
Tetrahydrofuran (109-99-9)

LISTINGS

NSF Standard 61 for PW, DWV, SEWER

IAPMO Listed

Meets ASTM Standard D 2564

PHYSICAL/CHEMICAL PROPERTIES

Appearance	Clear Liquid
Viscosity	min. 500 cps @ 73° F ± 2° F
Density	7.89 ± 0.2 lbs/gallon
Lap Shear Strength (minimum per ASTM Standards)	
2 hours	250 psi
16 hours	500 psi
72 hours	900 psi
Set Up Time	
30° F to 50° F	3 – 4 minutes
50° F to 70° F	2 – 3 minutes
70° F to 90° F	1 – 2 minutes
Shelf Life	3 years from manufacture date

Maximum VOC per SCAQMD 1168/316A or BAAQMD Method 40: 510 g/L

PRODUCT NUMBER	SIZE	PACK	CARTON WEIGHT
31132	16 oz.	24	30 lbs.
31132D	16 oz.	24	30 lbs.
31133	32 oz.	12	29 lbs.
31135	Gallon – Wide Mouth	6	50 lbs.

DIRECTIONS FOR USE

Read all directions carefully before using this product. • Do not breathe vapors. Use only in well ventilated area. If forced air ventilation is used, be sure it does not cause a fire hazard from solvent vapors. If adequate ventilation cannot be provided, wear a NIOSH-approved respirator for organic solvents. • Do not use or store near heat, sparks, or flames. Do not smoke, eat or drink when using. Do not take internally. Vapors may accumulate in low places and may ignite explosively. • Store and use at temperatures between -15ºF and 110ºF. At temperatures outside of this range, special care must be taken to prepare good joints and prevent exposures to solvents. • Stir or shake before using; if jelly-like, don't use. Keep container closed when not in use. • Avoid eye and skin contact - wear safety glasses with side shields and wear rubber gloves. • Do not thin.

1. Square pipe ends and remove all burrs and dirt.
2. Check dry fit of pipe and fitting. Pipe should easily go 1/3 of the way into the fitting. If the pipe bottoms, it should be snug.
3. Use a suitable applicator at least 1/2 the size of the pipe diameter. For larger size pipe systems use a natural bristle brush or roller.
4. Clean pipe and fitting with a listed primer. **Where local codes permit,** priming step is not necessary.
5. Apply liberal coat of cement to pipe to the depth of the socket; leave no uncoated surface.
6. Apply a thin coat of cement to inside of fitting; avoid puddling of cement. Puddling can cause weakening and premature failure of pipe or fitting. Apply a second coat of cement to the pipe.
7. Assemble parts QUICKLY. Cement must be fluid. If cement surface has dried, recoat both parts.
8. Push pipe FULLY into fitting using a 1/4 turning motion until pipe bottoms.
9. Hold pipe and fitting together for 30 seconds to prevent pipe push-out – longer at low temperatures. Wipe off excess.
10. Allow 15 minutes for good handling strength and 2 hours cure time at temperatures above 60ºF before hydrostatic pressure testing up to 180 psi. Longer cure times may be required at temperatures below 60ºF or with pipe diameters over 3". DO NOT TEST WITH AIR.

This product is not for use with caustic or acidic chemical solutions. Consult Oatey Technical Department for more information.

PRECAUTIONS

Read all information carefully before using this product.

DANGER: EXTREMELY FLAMMABLE. VAPORS MAY CAUSE FLASH FIRES. MAY IRRITATE EYES AND SKIN. VAPOR HARMFUL. MAY IRRITATE RESPIRATORY TRACT AND CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. HARMFUL OR FATAL IF SWALLOWED.

May cause irritation to eyes, skin, and nose, throat, and respiratory tract. May cause coughing, sore throat, difficulty breathing, headache, dizziness, nausea. Long term repeated overexposures to solvents may cause damage to the brain, nervous system, reproductive system, respiratory system, mucous membranes, liver, and kidneys. **KEEP OUT OF REACH OF CHILDREN.**
FIRST AID: If swallowed, **DO NOT INDUCE VOMITING.** Drink water and call a doctor or poison control center immediately. This product may be aspirated into the lungs and cause chemical pneumonitis, a potentially fatal condition. If contact with eyes, flush with water for 15 minutes and seek medical attention if irritation persists. If contact with skin, flush with water and then use baby oil or Oatey Hand Cleaner to remove residue. If inhaled and ill feelings develop, get fresh air and obtain medical attention if ill feelings persist. **FOR EMERGENCY FIRST AID INSTRUCTIONS CALL 1-877-740-5015.**
FIRE: Use dry chemical, foam, or carbon dioxide extinguisher. Water spray may be applied to reduce potential vapors or for cooling. Burning liquid extinguished with water will float and may re-ignite on surface of water.
SPILLS: Remove all sources of ignition and ventilate area. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with absorbent material. Put absorbent material in covered, labeled metal containers. Dispose of in accordance with local regulations.

A fire or explosion may result if dry granular calcium hypochlorite is used to disinfect plastic piping systems and is exposed to organic vapors found in solvent cements, cleaners or primers. Do not disinfect piping system with dry granules. Do not store dry granular calcium hypochlorite near solvent cements, cleaners or primers. DO NOT REUSE EMPTY CONTAINER. KEEP OUT OF REACH OF CHILDREN.

Refer to material safety data sheet for more information.

Before purchase and use of a product, review the product application and be certain the product, installation and use will be in compliance with any applicable codes and regulations.

2.04 - DOMESTIC WATER PIPING BURRIED WITHIN 5' OF THE BLDG

MUELLER INDUSTRIES, INC.

Date_____

Product Certification

Mueller Copper Tube products are all manufactured in the USA. All tubing produced in Fulton, MS, and Wynne, AR, is seamless and of UNS C12200 grade of copper and is manufactured to meet the chemical and mechanical properties of the applicable ASTM specifications set forth below. When specified at order placement, Mueller Copper Tube can supply Certified Tube to meet all requirements of the current applicable ASTM specification, at an additional cost.

2.04 - K COPPER TUBE

Streamline Copper Water Tube (Types K,L,M)
ASTM B88 and ANSI/NSF 61

Streamline Copper Refrigeration Service Coils
ASTM B280

Streamline Nitrogenized ACR Hard Drawn
Copper Tube - ASTM B280

Streamline Copper Drainage Tube (DWV)
ASTM B306

* Please contact Technical Services for certification in Oxygen and Medical service tube. (1.662.862.1700)
Oxygen & Medical Service Tube - To ASTM B819 (Types K & L) Hard Drawn Straight Lengths Only in Accordance To CGA Cleanness Specification; CGA G4.1 (Compressed Gas Association); & NFPA 99 (Health Care Facilities).

NSF 61 Restriction Statement: "Copper Tube (Alloy C12200) is certified by NSF to ANSI/NSF Standard 61 for public water supplies meeting or in the process of meeting the U.S. EPA Lead and Copper Rule (56FR 26460, June 7, 1991). Water supplies with pH less than 6.5 may require corrosion control to limit copper solubility in drinking water."

P. O. BOX 849 ◆ FULTON, MS 38843 ◆ (662) 862-1700 ◆ FAX (662) 862-3002

P. O. BOX 309 ◆ WYNNE, AR 72396 ◆ (870) 238-3201 ◆ FAX (870) 238-8724

2.04 - DOMESTIC WATER PIPING ABOVE GROUND INSIDE THE BLDG

MUELLER INDUSTRIES, INC.

Date_____

Product Certification

Mueller Copper Tube products are all manufactured in the USA. All tubing produced in Fulton, MS, and Wynne, AR, is seamless and of UNS C12200 grade of copper and is manufactured to meet the chemical and mechanical properties of the applicable ASTM specifications set forth below. When specified at order placement, Mueller Copper Tube can supply Certified Tube to meet all requirements of the current applicable ASTM specification, at an additional cost.

2.04 - L COPPER TUBE

Streamline Copper Water Tube (Types K,L,M)
ASTM B88 and ANSI/NSF 61

Streamline Copper Refrigeration Service Coils
ASTM B280

Streamline Nitrogenized ACR Hard Drawn
Copper Tube - ASTM B280

Streamline Copper Drainage Tube (DWV)
ASTM B306

* Please contact Technical Services for certification in Oxygen and Medical service tube. (1.662.862.1700)
Oxygen & Medical Service Tube - To ASTM B819 (Types K & L) Hard Drawn Straight Lengths Only in Accordance To CGA Cleanness Specification; CGA G4.1 (Compressed Gas Association); & NFPA 99 (Health Care Facilities).

NSF 61 Restriction Statement: "Copper Tube (Alloy C12200) is certified by NSF to ANSI/NSF Standard 61 for public water supplies meeting or in the process of meeting the U.S. EPA Lead and Copper Rule (56FR 26460, June 7, 1991). Water supplies with pH less than 6.5 may require corrosion control to limit copper solubility in drinking water."

P. O. BOX 849 ◆ FULTON, MS 38843 ◆ (662) 862-1700 ◆ FAX (662) 862-3002

P. O. BOX 309 ◆ WYNNE, AR 72396 ◆ (870) 238-3201 ◆ FAX (870) 238-8724

2.05 - A-1 & 2 COPPER FITTINGS SOLDERED JOINTS

Mueller Streamline Co.
8285 Tournament Drive, Suite 150
Memphis, TN 38125
P 901.753.3200

Date: June 5, 2014
Subject: **Product Standards - Copper Fittings**

Mueller Fittings Co. Inc. manufactures or supplies product which are manufactured to meet the following specifications.

STANDARDS:

- ASME B16.22: Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
- MSS SP-104: Wrought Copper Solder Joint Pressure Fittings
- ASME B16.29: Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV
- ASME/ANSI B16.18: Cast Copper Alloy Solder Joint Pressure Fittings
- ASME/ANSI B16.15: Cast Bronze Threaded Fittings
- ASME/ANSI B16.23: Cast Copper Alloy Solder Joint Drainage Fittings DWV
- ASME/ANSI B16.26: Cast Copper Alloy Fittings for Flared Copper Tube
- NSF/ANSI 61-G: Drinking Water System Components
- MSS SP-106: Class 150-Cast Copper Flanges shall meet the requirements of MSS SP-106 and/or the workmanship and dimensional of Federal Spec. WW-F-406 ASME B16.24.
- MSS SP – 106: Class 125 Bronze Pipe Flanges and Flanged Fittings
- MSS SP – 109: Welded Fabricated Copper Solder Joint Pressure Fittings
- MSS SP - 123: Threaded and Solder Joint Copper Unions

The materials used to manufacture these fittings are also in compliance with the following specifications:

Products Made From Sheet:

- ASTM B152 Alloy C11000: Standard Specification for Copper Sheet, Strip, Plated Rolled Bar Cast Products
- ASTM B584 Alloy C84400: Standard Specification for Copper Alloy Sand Castings
  - Or Alloy C87850: General Applications: Federal Specification WW-U-516
  - Or Alloy C87600: Type III, Class A and B Copper Alloy Unions
  - Or Alloy C89836: General Applications

Copper Fittings:

- ASTM B280 Alloy C12200: Standard Specification for Seamless Round, Copper Tube*
  - Or Alloy C10200: General Engineering applications

*NSF 61 Restriction Statement: "Copper Tube (Alloy C12200) is certified by NSF to ANSI/NSF Standard 61 for public water supplies meeting or in the process of meeting the U.S. EPA Lead and Copper Rule (56FR 26460, June 7, 1991). Water supplies with pH less than 6.5 may require corrosion control to limit copper solubility in drinking water."

Submittal Package

viega

ProPress® System

- [X] Potable Water
- [ ] Hydronic Heating
- [ ] Chilled Water
- Compressed Air
- [ ] Nitrogen N_2
- [ ] Argon
- [ ] Low Pressure Steam
- [ ] Fire Protection
- [ ] Vacuum
- [ ] Corgon
- [ ] Oxygen 0_2 (non medical)
- [ ] _____

Viega LLC, 100 N. Broadway, 6th Floor • Wichita, KS 67202 • Ph: 800-976-9819 • Fax: 316-425-7618

Submittal Package

System Data Sheet

ProPress® and ProPress XL (Copper) are safe, reliable and economical copper pipe installation systems that use modern cold press connection technology.
Viega® ProPress fittings are for use with type K, L and M hard copper tubing from ½" to 4" and soft copper tubing in ½" to 1¼" diameters. All tubing must comply with the ASTM B88 standard. ProPress fittings are approved for installations in both above and below ground applications. Per code, local inspector approval must be obtained prior to installation below ground.
ProPress has been used in Europe since the late 1980s and in the United States since the late 1990s for a variety of applications. Backed by two plumbing leaders with over 175 years of combined excellence.

Listings and Certificates

- NSF 61G
- IAPMO PS117
- UL 213
- FM Class 1920
- ICC LC 1002
- CSA MSE-13
- ABS

International Listings and Certificates

- Deutsch Verein des Gas-und Wasserfachese.V. (DVGW)
- Lloyd's Register (LR)
- Det Norske Veritas (DNV)
- Registro Italiano Navale (RINA)
- Bureau Veritas (BV)
- KIWA

Compliant with:

- ICC International Plumbing Code
- IAPMO Uniform Plumbing Code
- PHCC National Standard Plumbing Code
- Florida Building Code, Volume II Plumbing Code
- NFPA 13, 13D and 13R
- ASME B16.51
- U.S. Coast Guard

Viega ProPress fittings are offered in configurations including: Elbows, Couplings, Reducers, Tees, Reducing Tees, Threaded Adapters, Unions, Caps and Flanges. All threaded ½" to 2" fittings are Zero Lead bronze.

Operating Parameters

Operating Pressure:	200 PSI maximum
Test Pressure:	600 PSI maximum
Operating Temperature:	0°F to 250°F

Approved Applications:

- Potable Water
- Hydronic Heating (w/ Glycol)
- Chilled Water
- Compressed Air
- Non-medical Gases
- Fire Sprinkler (175 PSI maximum)
- Low Pressure Steam (15 PSI maximum)
- Vacuum (29.2 in. Hg maximum @ 68°F)

In ProPress ½" to 4" dimensions, the Smart Connect Feature assures leakage of liquids and/or gases from inside the system past the sealing element of an unpressed connection. The function of this feature is to provide the installer quick and easy identification of connections which have not been pressed prior to putting the system into operation.

Recommended Tools:

- RIDGID RP 200-B (½" to 1¼")
- RIDGID RP 210-B (½" to 1¼")
- RIDGID RP 320-E
- RIDGID RP 330-B or 330-C
- RIDGID RP 340
- RIDGID CT 400

Contact your local Viega representative for details on local approvals.

Submittal Package

Viega Limited Warranty ProPress® Fittings And Valves

Subject to the conditions and limitations in this Limited Warranty, Viega LLC (VIEGA) warrants to wholesalers and licensed plumbing and mechanical contractors in the United States and Canada that its PROPRESS fittings, when properly installed in non industrial and non marine applications and under normal conditions of use, will be free of failure from manufacturing defect for a period of fifty (50) years from date of installation and that its PROPRESS valves, when properly installed in non industrial and non marine applications and under normal conditions of use, will be free of failure from manufacturing defect for a period of two (2) years from date of installation.

Under this Limited Warranty, you only have a right to a remedy if the failure or leak resulted from a manufacturing defect in the products covered by this warranty and the failure or leak occurred during the warranty period. You do not have a remedy under this warranty and the warranty does not apply if the failure or any resulting damage is caused by (1) components other than those manufactured or sold by Viega; (2) not designing, installing, inspecting, or testing the ProPress fittings or valves in accordance with Viega's installation instructions in effect at the time of the installation; applicable code requirements; and accepted industry practice; (3) improper handling and protection of the product prior to and during installation, inadequate freeze protection, exposure to water pressures or temperatures or in applications outside acceptable operating conditions; (4) acts of nature such as, but not limited to, earthquakes, fire, flood, or lightning, or (5) external environmental causes, such as water quality variations, aggressive water, or other external chemical or physical conditions.

In the event of a leak or other failure of the parts covered by this warranty, it is the responsibility of the property owner to obtain and pay for repairs. Only if the warranty applies will Viega be responsible for the remedy under this warranty. The part or parts which you claim failed should be kept and Viega contacted by writing to the address below or telephoning 1-800-976-9819 within thirty (30) days after the leak or other failure and identifying yourself as having a warranty claim. You should be prepared to ship, at your expense, the product which you claim failed due to a manufacturing defect and document the date of installation. Within a reasonable time after receiving the product, Viega will investigate the reasons for the failure, which includes the right to inspect the product at Viega. Viega will notify you in writing of the results of its review.

In the event that Viega determines that the failure or leak was the result of a manufacturing defect in the part covered by this warranty and that this warranty applies, the EXCLUSIVE AND ONLY REMEDY under this warranty shall be the reimbursement for repair and/or replacement of the part. VIEGA SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR OTHER DAMAGE (FOR EXAMPLE, WATER OR PROPERTY OR MOLD REMEDIATION) UNDER ANY LEGAL THEORY AND WHETHER ASSERTED BY DIRECT ACTION, FOR CONTRIBUTION OR INDEMNITY OR OTHERWISE.

THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. If a limited warranty shall be found to apply, such warranty is limited to four years. Other than this Limited Warranty, Viega does not authorize any person or firm to create for it any other obligation or liability in connection with its products.

This Limited Warranty gives you specific legal rights and you also may have other rights which may vary from state to state. This warranty shall be interpreted and applied under the law of the state in which the product is installed and is intended as a Commercial Warranty.

*Zero Lead identifies Viega® products meeting the lead free requirements of NSF 61-G through testing under NSF/ANSI 372 (0.25% or less maximum weighted average lead content).

Viega products are designed to be installed by licensed and trained plumbing and mechanical professionals who are familiar with our products' proper use and installation. *Installation by non-professionals may void Viega LLC's warranty.*

This document subject to updates. For the most current Viega technical literature please visit www.viega.us.
Click Services -> Click Electronic Literature Downloads -> Select Product Line -> Select Desired Document

Viega LLC, 100 N. Broadway, 6th Floor • Wichita, KS 67202 • Ph: 800-976-9819 • Fax: 316-425-7618

T E A R R I S P R O D U C T S G R O U P
A L I N C L N E L E C T R I C C M P A N
50 P M H 50 .S.A T 5 3- 5 -2000 F 5 3- 5 - 0 5

TECHNICAL SPECIFICATION SHEET

IS 002
Cert. No. 31598

HARRIS SPEEDY® LEAD FREE SOLDER

STATEMENT OF LIABILITY- DISCLAIMER

Any suggestion of product applications or results is given without representation or warranty, either expressed or implied. Without exception or limitation, there are no warranties of merchantability or of fitness for particular purpose or application. The user must fully evaluate every process and application in all aspects, including suitability, compliance with applicable law and non-infringement of the rights of others. The Harris Products Group and its affiliates shall have no liability in respect thereof.

NOMINAL SOLDER COMPOSITION:

Copper	2.5 – 3.5%
Tin	Balance

PHYSICAL PROPERTIES: Mechanical properties of bulk solder

Solidus	450°F (232°C)	Density	7.52 g/cm³
Liquidus	555°F (290°C)	Brinell Hardness	11 HV
Color	Bright Silver		

SOLDERING PROPERTIES:

Speedy has a faster melting range, which allows operators to fill small, tight-fitting pipe connections speedily. Speedy's low temperature, free flowing nature increases cycle time while reducing setup time. Speedy can be used with Stay-Clean paste or liquid flux, as well as Bridgit paste flux. Speedy is a lead-free, low temperature alloy formulated for joining copper pipe in potable water systems. This tin-based alloy conforms to the 1986 Federal Safe Drinking Water Act Amendment.

AVAILABLE FORMS:

Speedy is available in 1/8" diameter wire on one pound spools.
Master cartons hold 50 pounds.

SPECIFICATION COMPLIANCE:

Harris Internal

RECOMMENDED FLUX:

Stay Clean soldering fluxes are recommended except on electrical or electronic applications, which require the use of a rosin core solder or 505 neutral flux.

WARNING: PROTECT yourself and others. Read and understand this information.
FUMES AND GASES can be hazardous to your health.
ARC RAYS can injure eyes and burn skin.
ELECTRIC SHOCK can KILL.

- Before use, read and understand the manufacturer's instructions, Material Safety Data Sheets (MSDS), and your employer's safety practices.
- Keep your head out of fumes.
- Use enough ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone and the general area.
- Wear correct eye, ear, and body protection.
- Do not touch live electrical parts.
- See American National Standard Z49.1, *Safety in Welding, Cutting, and Allied Processes,* published by the American Welding Society, 550 N.W. LeJeune Road, Miami, Florida 33126; OSHA Safety and Health Standards, available from the U.S. Government Office, Washington, DC 20402.

Additional information available at our web site: ***www.harrisproductsgroup.com***

6/99 DC

2.05 -A 2 - LEAD FREE FLUX

Oatey®
4700 W. 160th St.
Cleveland, OH 44135
PH:800-321-9532
FX:800-321-9535
www.oatey.com

TECHNICAL SPECIFICATION

H-20^{95} WATER SOLUBLE TINNING FLUX

Quality ISO 9001 System

TECHNICAL SPECIFICATION: Oatey H-20^{95} Water Soluble Tinning Flux cleans, tins and fluxes most commonly soldered metals including copper, brass, zinc, galvanized iron, lead and tin or copper-coated metals. Fluxing is a critical step in the soldering process. H-20^{95} Tinning Flux is lead-free and ideal for copper systems including fire sprinkler, hydronic heating, potable water service and DWV piping. H-20^{95} Tinning Flux remains active up to 700° F. H-2O^{95} Flux complies with CA & VT lead content regulations.

PHYSICAL/CHEMICAL PROPERTIES

Appearance	Greenish-Gray Paste
Shelf Life	1 year from manufacture date
pH	3-4
Solder Temp. Range	400-700 F

DIRECTIONS FOR USE

Paste Fluxes require only a small amount of flux applied to the joint. Clean all surfaces before soldering. Apply small amount of flux inside the fitting and outside of the pipe. Heat to temperature required for soldering. Do not overheat the piping. For small diameter piping, direct the heat near the joint. For large diameter piping, move the heat around the joint to ensure adequate solder flow around the circumference of the joint. NOT FOR USE WITH ALUMINUM, STAINLESS STEEL OR MAGNESIUM. DO NOT USE ON ELECTRICAL PARTS.

When soldering process is complete, allow joint to cool undisturbed. Remove any flux residual with a damp cloth. Do not store H-20^{95} Tinning Flux above 120° F.

PRECAUTIONS

Read all cautions and directions carefully before using this product. Apply flux with brush- do not apply with fingers. Wash thoroughly after handling and before eating. Eye/Skin contact may cause intense irritation and injury. In case of eye/skin contact, flush freely with water and seek medical attention immediately. If swallowed, DO NOT INDUCE VOMITING, drink water and call a physician or poison control center immediately. Ingestion of this product could cause gastrointestinal distress. DO NOT REUSE EMPTY CONTAINER. KEEP OUT OF REACH OF CHILDREN.

Refer to material safety data sheet for more information. For emergency first aid help, call 1-877-740-5015.

COMMON APPLICATIONS

Oatey H-20^{95} Water Soluble Tinning Flux can be used to solder most commonly soldered metals including copper, brass, zinc, galvanized iron and tin or copper-coated metals.

Consult Oatey Technical Department for applications not specifically referenced above.

INGREDIENTS (CAS Number)

Triethanolamine Hydrochloride (637-39-8)
Zinc Chloride (7646-85-7)
Ammonium Chloride (12125-02-9)
Surfactant Blend (N/A)
Inert Fillers (N/A)
Tin (7440-31-5)
Copper (7440-50-8)
Bismuth (7440-69-9)

COMPLIANCE AND LISTINGS

NSF

NSF Listed to Standard 61

Lead Free Flux
Complies with CA & VT lead legislation

Flux Base meets ASTM Standard B 813

PRODUCT NUMBER	DESCRIPTION	PACK	CARTON WEIGHT
30140	1.7 oz. H-20^{95} Water Soluble Tinning Flux	12	4 lbs.
30142	8 oz. H-20^{95} Water Soluble Tinning Flux	24	16 lbs.
30143	16 oz. H-20^{95} Water Soluble Tinning Flux	24	15 lbs.
53068	1.7 oz. H-20^{95} Water Soluble Tinning Flux with Brush – Carded	12	2 lbs.

2.06 - STORM PIPING BURRIED WITHIN 5' OF THE BLDG

CHARLOTTE
PIPE AND FOUNDRY COMPANY

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

SERVICE HUB AND SPIGOT PIPE AND FITTINGS
All cast iron pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute (CISPI)
ASTM A 74
ANSI A 112.5.1
Listed by NSF International
ISO 9001:2008

EXTRA HEAVY HUB AND SPIGOT PIPE AND FITTINGS
All cast iron pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute (CISPI)
ASTM A 74
ANSI A 112.5.1
Listed by NSF International
ISO 9001:2008

2.02 - B - PIPE & FITTINGS

NO-HUB PIPE AND FITTINGS
All cast iron pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute (CISPI)
CISPI Standard 301
ASTM A 888
Listed by NSF International
ISO 9001:2008

2.02 - B - PIPING C OUPLINGS

NO-HUB COUPLINGS
CISPI Standard 310
ASTM C 1277

NO-HUB HEAVY DUTY COUPLINGS
ASTM C 1540

COMPRESSION GASKETS
ASTM C 564
CISPI HSN 85

Very truly yours,

Hooper Hardison

Hooper Hardison, Executive Vice President

TERRI L. WILSON
NOTARY PUBLIC
Mecklenburg County, North Carolina
My Commission Expires July 2, 2012

Terri L. Wilson

Notary Public
My commission expires July 02, 2012

09/29/2010

PO Box 35430 Charlotte, NC 28235 USA 704/372-5030 800/438-6091 FAX 800/553-1605
www.charlottepipe.com

CHARLOTTE
PIPE AND FOUNDRY COMPANY

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:

>>> **SCH. 40 PVC PIPE**
ASTM D 1784, ASTM D 1785, ASTM D 2665
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD NO. 14 AND 61

SCH. 40 PVC DWV PIPE CELLULAR CORE
ASTM D 4396, ASTM F 891
NSF STANDARD NO. 14

SCH. 40 RePVC™ DWV PIPE
ASTM D 4396, ASTM F 1760
NSF STANDARD NO. 14

>>> **SCH. 40 PVC DWV FITTINGS**
ASTM D 1784, ASTM D 2665, ASTM D 3311
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD NO. 14

PVC PRESSURE PIPE SDR-21 AND SDR-26
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 NO. 14 AND 61

PVC 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, PVC 1120
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 SEWER MAIN PIPE
ASTM D 1784, ASTM D 3034 SDR 35
ASTM D 3212, ASTM F 477

PVC SEWER MAIN PIPE CELLULAR CORE
ASTM D 4396, ASTM F 891 PS 50

PVC SEWER AND DRAIN PIPE
ASTM D 1784, ASTM D 2729

PVC THIN WALL PIPE AND FITTINGS
ASTM D 1784, ASTM D 2949
NSF STANDARD NO. 14

CPVC CTS FLOWGUARD GOLD® PIPE & FITTINGS
ASTM D 1784, ASTM D 2846
FHA UM-61a
NSF STANDARD NO. 14. AND 61
CSA LISTED ON SPECIFIED ITEMS

CPVC CTS REUZE™ PIPE
ASTM D 1784, ASTM D 2846
NSF STANDARD NO. 14.

CHEMDRAIN® CPVC SCHEDULE 40 PIPE AND FITTINGS
ASTM D 1784, ASTM F 2618
NSF STANDARD NO. 14

SCH. 40 ABS DWV PIPE CELLULAR CORE
ASTM D 3965, ASTM F 628
NSF STANDARD NO. 14

SCH. 40 ABS DWV FITTINGS
ASTM D 3965, ASTM D 2661, ASTM D 3311
FHA UM 79a
FEDERAL SPECIFICATION L-P-322b
NSF STANDARD NO. 14

Very truly yours,

Hooper Hardison

Hooper Hardison, Executive Vice President

Terri L. Wilson

Notary Public
My commission expires July 02, 2012

TERRI L. WILSON
NOTARY PUBLIC
Mecklenburg County, North Carolina
My Commission Expires July 2, 2012

5/12/2010

PO Box 35430 Charlotte, NC 28235 USA 704/372-5030 800/438-6091 FAX 800/553-1605
www.charlottepipe.com

2.□□ NATURAL GAS PIPING □ IT□ □□O□ BLDG
□DPE □USION PIPE

For more information and technical assistance contact:

Performance Pipe, a division of
Chevron Phillips Chemical Company LP
P.O. Box 269006
Plano, TX 75026-9006
800.527.0662

Yellowstripe® 8300 Series
PE4710-PE100 / (PE3408) Pipe
Pipe Data Sheet

Typical material Physical Properties of Yellowstripe® 8300 series PE4710-PE100 / (PE3408)

High Density Polyethylene Materials

Property	Unit	Test Procedure	Typical Value
Material Designation	---	PPI-TR4	PE4710[(1)] PE100
Cell Classification	---	ASTM D3350	445574C 445576C
Pipe Properties			
Density	gms / cm^3	ASTM D1505	0.961 (black)
Melt Index (HLMI) Condition 190 / 21.6	gms/10min	ASTM D1238	8.0
Hydrostatic Design Basis, 73°F (23°C)	psi	ASTM D2837	1,600
Hydrostatic Design Basis, 140°F (60°C)	psi	ASTM D2837	1,000
Minimum Required Strength	Mpa (psi)	ISO 9080	>10 (>145)
Rapid Crack Propagation Critical Pressure(Pc), 0°C(32°F)[(2)]	Bar (psi)	ISO 13477	>12bar (>174) psi
Pipe Test Category	---	ASTM D2513	CEE
Material Properties			
Flexural Modulus at 2% strain	psi	ASTM D790	>150,000
Tensile Strength @ Yield (Type IV)	psi	ASTM D638	>3,500
Elongation at Break 2 in / min., Type IV Bar	%	ASTM D638	>800
Elastic Modulus @ Secant 2% strain (2in/min., type IV bar)	psi	ASTM D638	>200,000
Hardness	Shore D	ASTM D2240	65
PENT	hrs	ASTM F1473	>5000
Thermal Properties			
Vicat Softening Temperature	°F	ASTM D1525	255
Brittleness Temperature	°F	ASTM D746	-180
Thermal Expansion	in / in / °F	ASTM D696	1.0×10^{-4}

For more information and technical
assistance contact:

Performance Pipe, a division of
Chevron Phillips Chemical Company LP
P.O. Box 269006
Plano, TX 75026-9006
800.527.0662

1. Meets new requirements for PE4710 materials and use of increased design factors. 49CFR Part 192 references older versions of the PPI document that do not yet recognize the new requirements and carry the PE3408 designation.
2. Determination made using Small-Scale Steady state. Pc calculated in accordance with ISO 13477.

Members Of: PLASTICS·PIPE·INSTITUTE™

NOTICE: This data sheet provides tpical physical property information for polyethylene resins used to manufacture PERFORMANCE PIPE polyethylene piping products. It is intended for comparing polyethylene piping resins. It is not a product specification, and it does not establish minimum or maximum values or manufacturing tolerances for resins or for piping products. Some of these typical physical property values were determined using compression molded plaques. Values obtained from tests of specimens taken from piping product can vary from these typical values. Performance Pipe has made every reasonable effort to ensure the accuracy of this data sheet, but this data sheet may not provide all necessary information, particularly with respect to special or unusual applications. The data sheet may be changed from time to time without notice. Contact Performance Pipe to determine if you have the most recent edition.

2.1B HDPE FUSION PIPE CERTS

ABS Quality Evaluations

CERTIFICATE OF CONFORMANCE

This is to certify that the Quality Management System of:

Performance Pipe, a Division of Chevron Phillips Chemical Company LP

Division Headquarters
5085 West Park Avenue, Suite 500
Plano , TX 75093
U.S.A.

(WITH ADDITIONAL FACILITIES LISTED ON ATTACHED ANNEX)
has been assessed by ABS Quality Evaluations, Inc. and found to be in conformance with the requirements set forth by:

ISO 9001:2008

The Quality Management System is applicable to:

DESIGN AND MANUFACTURE OF POLYETHYLENE PIPE AND TUBING

Certificate No:	31547
Original Certification Date:	10 January 1996
Effective Date:	12 January 2011
Expiration Date:	15 November 2013
Issue Date	13 January 2011

Alex Weisselberg, President

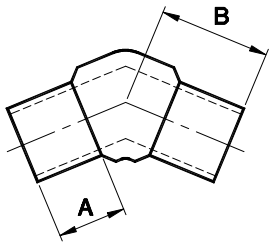
Validity of this certificate is based on periodic audits of the management system defined by the above scope and is contingent upon prompt, written notification to ABS Quality Evaluations, Inc. of significant changes to the management system or components thereof.

ABS Quality Evaluations, Inc. 16855 Northchase Drive, Houston, TX 77060, U.S.A.
Validity of this certificate may be confirmed at www.abs-qe.com/cert_validation.

2.□B□ PE 4□

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP

□□□.□□r□□r□ □□□□□□□□□□.□□□



B□□□4□□E□□□□ □

PRODUCED TO ASTM D2□□□ □ D□2□□
AND A□ □ A C□□□□□2 □ □□□□□□

B□□□4□ D□□r□□ E□□□	DR□□ □□□	D□□ □□□□□□□□ A □B □□□□	P□□□□□□□ □ □□□□□□□	P□□□□□□□ □ □□□□□ □□□□.□	B□□ □ □□□□ □□□□	CSA□	IAPMO□	□M □□□□	□M 2□□	R□□□r□□□□ N□□ □□r
2□IPS	DR □	2.□5 □3.20	20	20.0	20					□M020□L□5D□
	DR □			□□.□						
	DR □□			□5.2						
	DR □□			□3.0						
3□IPS	DR □	3.□0 □5.3□	□	□□.□	□					□M030□L□5D□
	DR □			□0.□					□	
	DR □□ □□□.5			□.0		□²		□		
	DR □3.5									
	DR □□									
□□IPS	DR □	3.00 □5.3□	□	□5.□	□					□M0□0□L□5D□
	DR □								□	
	DR □□ □□□.5	3.00 □□.□3		□.□		□²		□		
	DR □3.5					□				
	DR □□									
□□IPS	DR □	□.25 □□.□2	2	20.□	2					□M0□0□L□5D□
	DR □								□	
	DR □□ □□□.5	□.00 □□.3□		□3.3		□²	□	□		
	DR □3.5					□				
	DR □□									
□□IPS	DR □	□.00 □□0.00	□	22.□	□					□M0□0□L□5D□
	DR □								□	
	DR □□			□□.0		□		□		
	DR □3.5			□□.3		□				
	DR □□									

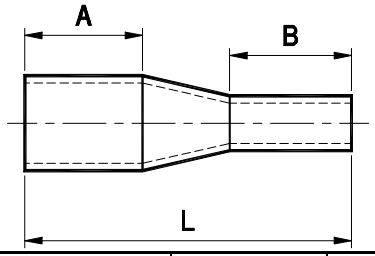
□ - CSA □□d IAPM□ □□□□□□□□□□ □□Dr□□□P□□□□ □500 MDPE □ □□□r□□□□ □NL□.
² - CSA □□□□DR□□ □□ □□□□r□□□d □□□□□□□.5□
□ - I□d□□□□□□ □□r□□□□□□□□□□□□r□□□□□□r □□□□□□□□□□ □□□dd□□□□□□□□r□□.
- Dr□□ □□□ N□. C□□0□25□

□□□□□□□PP 2.02
P□□□ □ □□ □

D□□□□ □□r 200□ S□□□r□□d□□ □□□r□□□□□ □□□□□□□□□□
□ 2002-200□ C□□□r□□ P□□□□□□ C□□□ □□□C□□ □□□□LP

2.□B□ PE REDUCERS

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP



B□□□R□d□□□r IPS □IPS

PRODUCED TO ASTM D2□□□ □□d D□2□□
□□d A□ □A C□□□□□2 □ C□□□□□□

B□□□R□d□□□r□ IPS □IPS	DR	D□□ □□□□□□□□ L □A □B □□□□	P□□□□□□□ □□□□□□□□	P□□□□□□□ □ □□□□□□□□□.□	B□□ □ □□□□□ □□□□	CSA[1]	IAPMO[1]	□M □□□ 2□□		R□□□r□□□□ N□□ □□r
□" IPS □ □□2" IPS	DR □□ □ □.3	□.□2 □ □.□5 □ □.□□	□0	0.□	200					□M□RSTI□
□" IPS □3□□" IPS	DR □□ □ □□	□.□□ □ □.□□ □ □.□□	□0	0.□	□50	□				□M□RSTI□
□ □□□" IPS □ □" IPS	DR □0 □ □□	□.□□ □ □.□0 □ □.□□	□0	□.2	□00	□				□M□RSTI□
	DR □□ □ □□					□				
□ □2" IPS □3□□" IPS	DR □ □ □	□.3□ □2.50 □3.00	□0	2.3	□0					□M□RSTI□
	DR □□ □ □□					□				
□ □2□IPS □ □□IPS	DR □ □ □	□.3□ □2.50 □3.00	□0	2.5	□0					□M□RSTI□
	DR □□ □ □□					□				
2" IPS □ □" IPS	DR □□ □ □□	□.□5 □2.□0 □3.□0	□0	3.0	□0	□				□M□RSTI□
2" IPS □ □ □□□□IPS	DR □ □ □	□.□□ □2.□□ □3.25	□0	3.5	□0					□M□RSTI□
	DR □□ □ □0					□				
	DR □□ □ □□									
2□IPS □ □ □2□IPS	DR □ □ □	□.25 □2.□3 □2.00	□0	3.0	□0					□M□RSTI□
	DR □□ □ □□					□				
3" IPS □2" IPS	DR □ □ □	□.□□ □2.□□ □3.00	□0	□.□	□0					□M□RSTI□
	DR □ □ □						□		□	
	DR □□ □ □□□	□.00 □3.□2 □2.□□		□.5		□		□		
	DR □3.5 □					□				
	DR □□ □ □□□									
□" IPS □2" IPS	DR □ □ □	□.3□ □3.00 □2.□□	□0	□□.3	□0					□M□RSTI□
	DR □ □ □			□5.3					□	
	DR □□ □ □□□	□.□5 □3.0□ □2.□□		□□.□		□	□	□		
	DR □3.5 □					□				
	DR □□ □ □□□									
□" IPS □3" IPS	DR □ □ □	□.□□ □3.00 □3.00	□0	□□.3	□0					□M□RSTI□
	DR □ □ □								□	
	DR □□ □ □□□	□.□□ □3.□2 □3.00		□□.□		□	□	□		
	DR □3.5 □					□				
	DR □□ □ □□									
□" IPS □ □" IPS	DR □ □ □	□.00 □3.00 □3.00	□	2□.□	□					□M□RSTI□
	DR □ □ □			23.0			□		□	
	DR □□ □ □□□	□□.50 □□.□2 □ □.□2		2□.□		□		□		
	DR □3.5 □			2□.2		□				
	DR □□ □ □□			2□.□						
□" IPS □ □" IPS	DR □ □ □	□□.□2 □ □.3□ □ □.50	□	□.□	□					□M□RSTI□
	DR □ □ □								□	
	DR □□ □ □□□			□.5		□		□		
	DR □3.5 □					□				
	DR □□ □ □□									

□ - F□□□□□□3□DR □□ □□d □□r□□r □□□□ □ □□□□DR □□.5 □r□□□r□□.
[1] - CSA □□d IAPM□ □□□□□□□□□ □□Dr□□□□P□□□[1] □500 MDPE □ □□□r□□□□ □NL□.
□ - I□d□□□□□□ □□r□□□□□□□□□□□r□□□□□□r □□□□□□□□□□ □r □□□□□□□□dd□□□□□□□□r□□.
- Dr□□ □□□□ N□. C□□0□2□□ □□r □□IPS □ □2□IPS□2□IPS □3□□□IPS□□□d □-□□□□IPS □ □□IPS.
- Dr□□ □□□□ N□. C□□0□3□□ □□r □-□2□IPS □3□□□IPS □□r□ □□IPS □ □□IPS

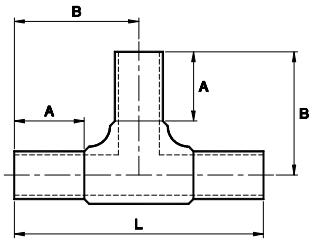
□□□□□□□□PP □.0□
P□□□ □ □□□

D□□□□ □□r 200□ S□□□r□□d□□ □□□□r□□□□□ □□□□□□□□□□□□
□ 2003□ 200□C□□□r□□ P□□□□□□□C□□□ □□□□C□□ □□□□LP

2.□B□ PER TEE

PERFORMANCE PIPE
A DIVISION OF CHEVRON PHILLIPS CHEMICAL COMPANY LP

□□□.□□r□□r□ □□□□□□□□□.□□□



BUTT TEE

PRODUCED TO ASTM D2□□□ □ D□2□□
□□d A□ □ A C□□□□□2 □ C□□□□□□

M□d□d B□□□T□□	DR□□ □□□	D□□ □□□□□□□□ A □B □L □□□□	P□□□□□□□ □ □□□□□□□	P□□□□□□□ □ □□□□□□□□□.	B□□ □ □□□□□□□	CSA[1]	IAPMO[1]	□M □□□	2□□	R□□□r□□□□ N□□ □□r
□2" CTS	0.0□0 □□□	□.□□ □2.□3 □5.□5	□0	0.□	□00	□				□M.50□TSTR□
3□□□CTS	0.0□0 □□□	□.□2 □2.□□ □5.□□	□0	□.□	50					□M.□5□TSTR□
□" CTS	0.□02 □□□	□.□2 □2.□□ □5.□□	□0	□.3	50					□M0□0□TSTR□
	0.□25 □□□				50					
□2" IPS	DR □.3	□.□2 □2.□□ □5.□□	□0	.□	50					□M.50□TSTR□
3□□" IPS	DR □□	□.□2 □2.□□ □5.□□	□0	□.2	50	□				□M.□5□TSTR□
□" IPS	DR □	□.□2 □3.0□ □□.□2	□0	□.□	50					□M0□0□TSTR□
	DR □□				50	□				
□ □□□" IPS	DR □	2.50 □3.□0 □□.□0	□0	□.□	□0					□M□.25□TSTR□
	DR □0	2.□5 □□.53 □□.25	□0	5.2	□0	□				
	DR □□				□0	□				
□ □2" IPS	DR □□	3.02 □□.□2 □□.2□	□0	□.□	□0	□	□			□M□.50□TSTR□
	DR □				□0					
2" IPS	DR □	2.□□ □5.□25 □ □0.25	□0	□□.0	□0					□M020□TSTR□
	DR □		□0	□□.□	□0				□	
	DR □□		□0	□0.0	□0	□	□	□		
	DR □□		□0	□0.0	□0					
3" IPS	DR □	3.00 □□.0□ □□2.□3	□	□5.3	□					□M030□TSTR□
	DR □		□	□□.□	□				□	
	DR □□.□	3.00 □5.□2 □□□.□□	□	□0.□	□	□[2]	□	□		
	DR □3.5				□	□				
	DR □□				□					
□" IPS	DR □	3.00 □□.22 □□2.□□	□	23.0	□					□M0□0□TSTR□
	DR □		□	22.0	□				□	
	DR □□.□	3.00 □□.□5 □□3.50	□	2□.0	□	□[2]	□	□		
	DR □3.5		□	20.0	□	□				
	DR □□		□	□□.□	□					
□" IPS	DR □	□.25 □□.□3 □□□.25	□	□□.□	□					□M0□0□TSTR□
	DR □				□				□	
	DR □□.□	□.0□ □□.3□ □□□.□2	□	□□.□	□	□[2]	□	□		
	DR □3.5				□	□				
	DR □□				□					
□" IPS	DR □	□.00 □□2.0□ □ 2□.□□	□	3□.□	□					□M0□0□TSTR□
	DR □		□	3□.□	□				□	
	DR □□		□	2□.5	□	□		□		
	DR □3.5		□	2□.3	□	□				
	DR □□				□					

[1] - CSA □□d IAPM□ □□□□□□□□□ □□Dr□□□P□□□[1] □500 MDPE □ □□□r□□□□ □NL□.
[2] - CSA □□□□DR□□ □□ □□□r□□□d □□□□□□.5□
□ - I□d□□□□□ □□r□□□□□□□□□r□□□□□r □□□□□□□ □r □□□□□□□dd□□□□□□□□r□□.
- Dr□□ □□□ N□. C□ □0□2□□ □r □2□CTS □r□ □□IPS □ C□ □0□25□ □r □-□□□IPS □r□ □□IPS

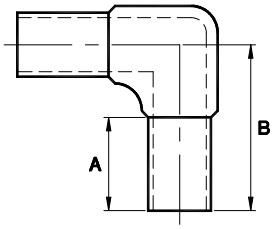
□□□□□□PP 3.0□
P□□□ □ □□□

D□□□□ □□r 200□ S□□□r□□d□□ □□□r□□□□□ □□□□□□□□□□
□ 2003□ 200□C□□□r□□P□□□□□C□□□ □□□C□□ □□□□LP

2.□B□ PE □□ ELBO□ S

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP

□ □ □.□□r□□r□ □□□□□□□□□.□□□



B□□□□□E□□□

PRODUCED TO ASTM D2□□□ □ D□2□□
□□d A□ □ A C□□□□□2 □ C□□□□□□

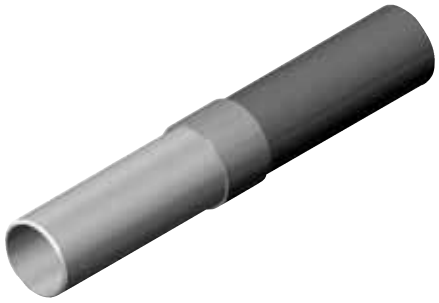
B□□□□□ D□□r□□ E□□□	DR□□ □□□	D□□ □□□□□□□ A □ B □□□□	P□□□□□□ □ □□□□□□□	P□□□□□□ □ □□□□□□□□□.□ □ □□□□□□□	B□□□	CSA[1]	IAPMO[1]	□M □□□	2□□	R□□□r□□□□ N□□ □□r
□2" CTS	0.0□0 □ □□□	□.□□ □ □.□□	□0	0.□	□00					□M.50□L□0D□
3□□" CTS	0.0□0 □ □□□	□.□2 □2.□□	□0	0.□	50					□M.□5□L□0D□
□" CTS	0.□02 □ □□□ 0.□25 □ □□□	□.□□ □2.□□	□0	0.□	50					□M0□0□L□0D□
3□□" IPS	DR □□	□.□2 □2.□□	□0	0.□	50	□				□M.□5□L□0D□
□" IPS	DR □ DR □□	□.□2 □3.0□	□0	□.3	50	□	□			□M0□0□L□0D□
□ □□□" IPS	DR □ DR □0 DR □□	2.50 □3.□□ 3.□3 □□.50	□0	3.2	20	□ □				□M□.25□L□0D□
□ □2" IPS	DR □ DR □□	3.00 □□.50	□0	5.0	□0	□				□M□.50□L□0D□
2" IPS	DR □ DR □ DR □□ DR □□	2.□□ □5.0□	□0	□0.□ □.3 □.□ □.□	□0	□	□	□	□	□M020□L□0D□
3" IPS	DR □ DR □ DR □□ □□□.5 DR □3.5 DR □□	3.00 □□.00 3.00 □5.□3	□	□□.□ □.3	□	□[2]	□	□	□	□M030□L□0D□
□" IPS	DR □ DR □ DR □□ □□□.5 DR □3.5 DR □□	3.00 □□.00 3.00 □□.□5	□	□□.2 □□.3	□	□[2]	□	□	□	□M0□0□L□0D□
□" IPS	DR □ DR □ DR □□ □□□.5 DR □3.5 DR □□	□.25 □□.□3 □.00 □□.25	2	2□.2 2□.□ □□.3 □□.□	2	□[2]	□	□	□	□M0□0□L□0D□
□" IPS	DR □ DR □ DR □□ DR □3.5 DR □□	□.00 □ □□.□□	□	2□.5 20.2		□ □		□		□M0□0□L□0D□

□ - CSA □□d IAPM□ □□□□□□□□□ □□ Dr□□□□P□□□□ □500 MDPE □ □□□r□□□□ □NL□.
[2] - CSA □□□□ DR□□ □□ □□□r□□□d □□□□□□□.5□
□ - I□d□□□□□□ □□r□□□□□□□□□□□□□r□□□□□□r □□□r□□r□□□ □□□□□□□□□□ □□□dd□□□□□□□□r□□.
- Dr□□ □□□ N□. C□□0□2□□ □r □2□CTS □r□ □□IPS □ C□□0□255 □r □-□□□IPS □r□ □□IPS

□□□□□□□PP 2.0□
P□□□ □ □□□

D□□□□ □□r 200□ S□□□r□□d□□ □□□□r□□□□□ □□□□□□□□□□
□ 2003-200□ C□□□r□□ P□□□□□□ C□□□ □□□C□□ □□□□LP

Weld-End Transition Fittings: with PE3408 Gas Pipe



WELD END TRANSITIONS: w/PE3408 GAS PIPE				
Size	Description	Part Number	Wt.	Box / Pallet
½" IPS × ½" CTS	.090 BLK 8100	6500640	1.74	30 / 360
¾" IPS × ½" CTS	.090 BLK 8300	6500320	1.52	40 / 640
¾" IPS × ¾" IPS	DR11 BLK 8300	6500321	1.53	40 / 640
1" IPS × 1" IPS	DR11 BLK 8100	6501142	2.26	32 / 512
1" IPS × 1" IPS	DR11 BLK 8300	6500322	3.46	16 / 192
1¼" IPS × 1¼" IPS	DR11 BLK 8100	6501052	3.29	15 / 240
1¼" IPS × 1¼" IPS	DR11 BLK 8300 w/18" SLV	10000745	3.32	16 / 192
1½" IPS × 1¼" IPS	DR11 BLK 8300	6500323	4.36	25 / 300
2" IPS × 2" IPS	DR11 BLK 8100	6501002	5.26	16 / 192
2" IPS × 2" IPS	DR11 BLK 8300 w/24" SLV	6500307	6.87	9 / 108
2" IPS × 2" IPS	DR11 BLK 8300	6500311	6.87	9 / 108
3" IPS × 3" IPS	DR11 BLK 8100	650030300110	13.67	5 / 60
3" IPS × 3" IPS	DR11 BLK 8300	6500522	17.57	4 / 48
4" IPS × 4" IPS	DR11 BLK 8100	6501144	18.87	4 / 48
4" IPS × 4" IPS	DR11 BLK 8300 w/30" SLV	6500308	24.38	4 / 48
4" IPS × 4" IPS	DR11 BLK 8300	6500318	18.80	4 / 48
6" IPS × 6" IPS	DR11 BLK 8100	6501145	45.83	4 / 24
6" IPS × 6" IPS	DR11 BLK 8300	6500576	67.50	1 / 9
8 IPS × 8" IPS	DR11 BLK 8100	6501082	93.80	1 / 9
8 IPS × 8" IPS	DR11 BLK 8300	6500629	127.50	1 / 9
10" IPS × 10" IPS	DR11 BLK 8100	6501083	170.00	1 / 3
10" IPS × 10" IPS	DR11 BLK 8300	6500642	170.00	1 / 3
12" IPS × 12" IPS	DR11 BLK 8300	6500500	241.60	1 / 2

Protective sleeves are available on request.
Please call for sizes and prices.
For transition fittings larger than 12" call for availability and pricing.

Anodeless Risers: with PE3408/PE4710 Pipe

RESIDENTIAL Anodeless Risers w/PE3408/PE4710 Pipe				
Size	Description	Part Number	Wt.	Box / Pallet
¾" MPT × ½" CTS	.090 22V × 18H	6360514	3.00	10 / 140
¾" MPT × ½" CTS	.090 30V × 30H	6360503	3.75	10 / 140
¾" MPT × ½" CTS	.090 36V × 24H	6360490	5.30	200
¾" MPT × ¾" IPS	DR11 24V × 36H	6380241	5.60	8 / 112
¾" MPT × ¾" IPS	DR11 24V × 36H	6380306	5.60	8 / 112
¾" MPT × ¾" IPS	DR11 30V × 30H	10000016	6.00	8 / 112
¾" MPT × ¾" IPS	DR11 30V × 30H	6380150	6.00	8 / 112
¾" MPT × ¾" IPS	DR11 36V × 24H	10001698	5.60	8 / 112
1" MPT × ¾" IPS	DR11 30V × 30H	10000444	6.25	8 / 112
1" MPT × 1" CTS	.090 36V × 24H	10000998	5.75	8 / 112
1" MPT × 1" CTS	DR11 36V × 24H	10003843	5.75	8 / 112
1" MPT × 1" CTS	.101 30V × 30H	10000850	5.75	8 / 112
1" MPT × 1" IPS	DR11 24V × 24H	6380222	3.00	6 / 84
1" MPT × 1" IPS	DR11 24V × 36H	6380310	3.75	6 / 84
1" MPT × 1" IPS	DR11 30V × 30H	6380288	5.30	6 / 84
1" MPT × 1" IPS	DR11 30V × 30H	6380315	5.60	6 / 84
1" MPT × 1" IPS	DR11 36V × 24H	6380165	5.60	6 / 84
1" MPT × 1" IPS	DR11 36V × 24H	6380270	6.00	6 / 84

COMMERCIAL Anodeless Risers w/PE3408/PE4710 Pipe				
Size	Description	Part Number	Wt.	Box / Pallet
1¼" MPT × 1¼" IPS	DR11 36V × 24H	6360151	6.00	6 / 84
2" MPT × 2" IPS	DR11 36V × 34H	10000597	5.60	15 / 15
2" MPT × 2" IPS	DR11 36V × 34H	6380148	6.25	15 / 15
2" MPT × 2" IPS	DR11 36V × 34H	6380208	5.75	15 / 15
2" MPT × 2" IPS	DR11 48V × 36H	6380273	5.75	15 / 15
3" MPT × 3" IPS	DR11 42V × 24H	10001688	5.75	16 / 16
4" MPT × 4" IPS	DR11 42V × 24H	10001826	41.78	12 / 12

Protective sleeves are available on request.
Please call for sizes and prices.
GF Central Plastics offers thousands of different riser configurations.
The configurations listed here are our standard stocking sizes.

Standard Steel Pipe

ASTM A53 TYPE E GRADE B

Submittal Data Sheet

2.09 A - STEEL PIPE ABOVE GROUND

Scope

Covers black and hot-dipped galvanized electric-resistance welded Grade B pipe. Pipe is intended for mechanical and pressure applications and is acceptable for ordinary uses in steam, water, gas and air lines. Wheatland ASTM A53 is UL® Listed, 2–6 NPS, and FM Approved, 2–8 NPS, for use in fire sprinkler pipe applications, and is suitable for welding, threading and grooving. Produced to the latest revision of ASTM A53/53M, Federal Specification WW-P404 and ASME B36.10M.

Manufacture

The weld seam shall be heat treated after welding to a minimum of 1400°F or be otherwise processed in such a manner that no untempered martensite remains.

Hot-dip Galvanized

The average weight of zinc coating shall be not less than 1.8 oz. per sq. ft. of surface (inside and outside). When galvanized pipe is bent or otherwise fabricated to a degree which causes zinc coating to stretch or compress beyond the limit of elasticity, some flaking of the coating may occur.

Hydrostatic and Nondestructive Electric Testing

Hydrostatic inspection test pressures for plain-end pipe are listed in Table X 2.2 of the A53/A53M specification. Test pressures shall be maintained for a minimum of five seconds. Nondestructive electric testing of the weld seam is required on each length of ERW pipe 2 NPS and larger.

Chemical Requirements

Composition, max. %

Carbon	Manganese	Phosphorus	Sulfur	
.30	1.20	.05	.045	
Copper*	Nickel*	Chromium*	Molybdenum*	Vanadium*
.40	.40	.40	.15	.08

*The combination of these five elements shall not exceed 1.00%.

Tensile Requirements

TENSILE STRENGTH, MIN.	YIELD STRENGTH, MIN.	ELONGATION IN 2"
60,000 psi	35,000 psi	Refer to A53 table x 4.1

Bending Test (Cold)

NPS	DEGREE OF BEND	DIAMETER OF MANDREL
2 and under	90°	12x pipe OD

Flattening Test

As a test for ductility of the weld for pipe 2½ NPS and larger, position the weld at 0° and alternately at 90° to the direction of force and flatten until the OD is ⅔ of the original outside diameter. No cracks shall occur along the inside or outside surface of the weld.

Frequency of Tests

Tensile tests are required on one length of pipe from each lot of 500 lengths or fraction thereof for each size. Refer to A53 specification for frequency of flattening tests.

End Finish

Plain End: 2 NPS and larger, STD and XS weights: ends beveled to angle of 30°, +5°, -0° with a root face of 1/16" ± 1/32"

Threaded: to ANSI® Standard B 1.20.1
Couplings: to ASTM Standard A 865

Weights and Dimensions

STANDARD (SCH. 40) BLACK PLAIN END

NPS	OD	NOMINAL WALL	WEIGHT
	in.	in.	lbs./ft.
2	2.375	0.154	3.66
2½	2.875	0.203	5.80
3	3.500	0.216	7.58
4	4.500	0.237	10.88
5	5.563	0.258	14.63
6	6.625	0.280	18.99
8	8.625	0.322	28.58

EXTRA STRONG (SCH. 80) BLACK PLAIN END

NPS	OD	NOMINAL WALL	WEIGHT
	in.	in.	lbs./ft.
2	2.375	0.218	5.03
2½	2.875	0.276	7.67
3	3.500	0.300	10.26
4	4.500	0.337	15.00

All information contained herein is accurate as known at the time of publication. Wheatland reserves the right to change product specifications without notice and without incurring obligations.

Permissible Variations in Wall Thickness

Minimum wall thickness at any point shall not be more than 12.5% under nominal wall thickness specified.

Permissible Variations in Outside Diameter

Pipe 2 NPS and larger shall not vary more than ± 1% from the standard specified.

Permissible Variations in Weight per Foot

Pipe shall not vary more than ± 10% from the standard specified.

Product Marking

Each length of pipe is continuously stenciled to show the manufacturer, the grade of pipe (ASTM A53), the kind of pipe (E for Electric Resistance Welded, B for Grade B), the size (XS for extra strong), and length. Stencil markings on standard Schedule 40 pipe indicate UL Listing for 2–6 NPS and FM Approval for 2–8 NPS for use in fire sprinkler pipe applications. Bar coding is acceptable as a supplementary identification method.

SUBMITTAL INFORMATION

PROJECT: _____ CONTRACTOR: _____ DATE: _____

ENGINEER: _____ SPECIFICATION REFERENCE: _____ SYSTEM TYPE: _____

LOCATIONS: _____ COMMENTS: _____

WST-070919

700 South Dock Street
Sharon, PA 16146
P 800.257.8182
F 724.346.7260

info@wheatland.com
wheatland.com
Follow us on Twitter:
@WheatlandTube

Wheatland Tube
A DIVISION OF ZEKELMAN INDUSTRIES

2.09 GAS PIPING FITTINGS ABOVE GROUND

WARD MANUFACTURING

P.O. Box 9
117 Gulick Street
Blossburg, PA 16912-0009 (570) 638-2131

January 11, 2013

To whom it may concern:

I hereby certify that our products listed below comply with the current specification. The products listed below are made with pride in Blossburg, Pennsylvania, USA.

1 >>>>>>>> **CL 150 Malleable Iron Threaded Fittings**

Fed. Spec. WW - P - 521		
ASME	B16.3	(Dimensions)
ASTM	A-197	(Chemical & Physical Properties)
ASTM	A-153	(For Galvanized Product)
ANSI/ASME	B1.20.1	(Tapered Pipe Threads)

CL 300 Malleable Iron Threaded Fittings

ASME	B16.3	(Dimensions)
ASTM	A-197	(Chemical & Physical Properties)
ASTM	A-153	(For Galvanized Product)
ANSI/ASME	B1.20.1	(Tapered Pipe Threads)

3 >>>>>>>> **Unions, Union Fittings, Flange Unions & Companion Flanges**

CL 150 Malleable Iron to Brass Seat, Iron to Iron Unions		
Fed. Spec. WW - U - 531		ASME B16.39
CL 250 Malleable Iron to Brass Seat,Unions		
Fed. Spec. WW - U - 531		ASME B16.39
CL 300 Malleable Iron to Brass Seat, Iron to Iron Unions		
MIL - U - 18250		ASME B16.39
CL 125 - CL 250 Cast Iron Flanges		ASME B16.1
ASTM	A-126	(Chemical & Physical Properties)
ASTM	A-153	(For Galvanized Product)
ANSI/ASME	B1.20.1	(Tapered Pipe Threads)

Bushings and Plugs

Fed. Spec. WW - P - 471		
ASME	B16.14	(Dimensions)
ANSI/ASME	B1.20.1	(Tapered Pipe Threads) Supersedes B-2-1
ASTM	A-197 or A-126	(Chemical & Physical Properties)
ASTM	A-153	(For Galvanized Product)

4 >>>>>>> **CL 125 Cast Iron Threaded Fittings**

Fed. Spec. WW - P - 501		
ASME	B16.4	(Dimensions)
ASTM	A-126	(Chemical & Physical Properties)
ASTM	A-153	(For Galvanized Product)
ANSI/ASME	B1.20.1	(Tapered Pipe Threads)

Top Beam & C-Clamps

ASTM	A-197	(Chemical & Physical Properties)
ASTM	A-153	(For Galvanized Product)
UL	203	(Test Parameters)

Drainage Fittings

ASME	B16.12	(Dimensions)
ASTM	A-126	(Chemical & Physical Properties)
ASTM	A-153	(For Galvanized Product)
ANSI/ASME	B1.20.1	(Tapered Pipe Threads)

Cast Iron Flanges

ASME	B16.1	(Dimensions)
ASTM	A-126	(Chemical & Physical Properties)
ASTM	A-153	(For Galvanized Product)
ANSI/ASME	B1.20.1	(Tapered Pipe Threads)

WARDLOX Plain-End Fittings

ASTM	A-126	(Chemical & Physical Properties, Housing)
ASTM	D2000	(Gaskets, Temperature Range)
ANSI/ASME	B1.20.1	(Tapered Pipe Threads)

TEE-LOX Mechanical Branch Connectors

ASTM	A-126	(Chemical & Physical Properties, Housing)
ASTM	D2000	(Gaskets, Temperature Range)
ANSI/ASME	B1.20.1	(Tapered Pipe Threads)

Full Standard Merchant Couplings

ASTM	A-865	(Dimensions)
ASTM	A-53	(Chemical & Physical Properties)
ANSI/ASME	B1.20.1	(Tapered Pipe Threads)

Half Standard Merchant Couplings

ASTM	A-865	(Dimensions)
ASTM	A-53	(Chemical & Physical Properties)
ANSI/ASME	B1.20.1	(Tapered Pipe Threads)

Welded Steel Pipe Nipples

ASTM	A-733	(Dimensions)
ASTM	A-53	(Chemical & Physical Properties)
ASNI/ASME	B1.20.1	(Pipe Threads)

Sincerely,

Jim Belawski
Manager of Quality Assurance

Garlock
SEALING TECHNOLOGIES®
an EnPro Industries company

2.09 NATURAL GAS PIPING ABVE GROUND GASKET

Garlock BLUE-GARD® 3200

MATERIAL PROPERTIES*

Color:	Off-white
Composition:	Aramid fibers with a SBR binder
Fluid Services[1]:	Water, saturated steam[4], inert gases
Temperature[2], °F (°C)	
Minimum:	-100 (-73)
Continuous Max:	+400 (+205)
Maximum:	+700 (+371)
Pressure[2], Maximum, psig (bar):	1200 (83)
P x T (max.)[2], psig x °F (bar x °C)	
1/32 and 1/16":	350,000 (12,000)
1/8":	250,000 (8,600)
Meets Specification:	ABS (American Bureau of Shipping) and MIL-DTL-24696C[6]

TYPICAL PHYSICAL PROPERTIES*

ASTM F36	**Compressibility**, range, %:	7-17	
ASTM F36	**Recovery**, %:	50	
ASTM F38	**Creep Relaxation**, %:	18	
ASTM F152	**Tensile**, Across Grain, psi (N/mm^2):	2250 (15)	
ASTM F1315	**Density**, lbs./ft.^{3} (grams/cm^3):	100 (1.60)	
ASTM F433	**Thermal Conductivity (K)**, W/m°K (Btu.·in./hr.·ft.^{2}·°F):	0.29-0.38 (2.00-2.65)	
ASTM D149	**Dielectric Properties**, range, volts/mil.		
	Sample conditioning	1/16"	1/8"
	3 hours at 250°F:	508	285[3]
	96 hours at 100% Relative Humidity:	116	140
ASTM F586	**Design Factors**	1/16" & Under	1/8"
	"m" factor:	3.5	6.6
	"y" factor, psi (N/mm^2):	2100 (14.5)	3000 (20.7)
ASTM F104	**Line Call Out**:	F712902A9B4E45K5L102M9[5]	

SEALING CHARACTERISTICS*

	ASTM F37B Fuel A	ASTM F37B Nitrogen	DIN 3535- 4 Gas Permeability
Gasket Load, psi (N/mm2):	500 (3.5)	3000 (20.7)	4640 (32)
Internal Pressure, psig (bar):	9.8 (0.7)	30 (2)	580 (40)
Leakage	**0.1 ml/hr.**	**0.4 ml/hr.**	**0.03 cc/min**

IMMERSION PROPERTIES*- ASTM F146 Fluid Resistance after Five Hours

	ASTM #1 Oil 300°F (150°C)	ASTM IRM #903 300°F (150°C)	ASTM Fuel A 70-85°F (20-30°C)	ASTM Fuel B 70-85°F (20-30°C)
Thickness Increase, (%)	0-10	15-30	0-15	5-20
Weight Increase, (%)	<20	-	<25	<30
Tensile Loss, (%)	-	<70	-	-

Notes:

This is a general guide and should not be the sole means of selecting or rejecting this material. ASTM test results in accordance with ASTM F-104; properties based on 1/32" (0.8mm) sheet thickness unless otherwise mentioned.

* Values do not constitute specification Limits

[1] See Garlock chemical resistance guide.

[2] Based on ANSI RF flanges at our preferred torque. When approaching maximum pressure, continuous operating temperature, minimum temperature or 50% of maximum PxT, consult Garlock Applications Engineering. Minimum temperature rating is conservative.

[3] Indicates current arced around and not through gasket. Dielectric higher than indicated.

[4] These styles are not preferred choices for steam service, but are successful when adequately compressed. Minimum recommended assembly stress = 4,800psi. Preferred assembly stress = 6,000-10,000psi. Gasket thickness of 1/16" strongly preferred. Retorque the bolts/studs prior to pressurizing the assembly. For saturated steam above 150psig or superheated steam, consult Garlock Engineering.

[5] Fourth numeral 9: % Thickness Increase in IRM Oil #903 = 25-50% max. A9: Leakage in Fuel A (Isooctane), Gasket Load = 500psi (3.5N/mm2), Pressure = 9.8psig (0.7bar): Typical = 0.1ml/hr, Max = 1.0ml/hr. A9: Leakage in Nitrogen, Gasket Load = 3,000psi (20.7N/mm2), Pressure = 30psig (2bar): Typical = 0.4ml/hr, Max = 1.0ml/hr. M9: Tensile Strength = 2,250psi min. (15N/mm2 min.).

[6] To ensure receipt of product branded Mil-G-24696, certification will be required- - fees associated based on quantity. Refer to "Military Specifications" in the Gasketing Terms section of the Engineered Gasket Products catalog for order/inquiry requirements.

WELDBEND®

Fitting Summary Data Sheet

Even with all the advances in technology today, the wholly welded piping system has for decades remained the best choice for use in high pressure and high temperature application. Many piping jobs in schools, industrial plants, refineries and factories have benefited from the inherent advantages of a completely welded system. It becomes a closed container joining pipes, valves, fittings, and flanges. A welded joint actually becomes part of the pipe, minimizing leak potential. This provides greater margins of safety, especially under conditions of high internal pressures. Additionally, welding fittings form a continuous metal structure with the pipe, adding forged-in strength to any piping system. Furthermore, smooth forged fittings simplify insulation and take up less space.

ASTM A 234

Scope

This standard covers wrought carbon steel fittings of seamless and welded construction which are manufactured to the dimensional specifications of ASME B16.9 and B16.28. These fittings are primarily for use in pressure piping and in pressure vessel fabrication for service at moderate and elevated temperatures.

Materials

The starting material for fittings shall consist of killed steel, forgings, bars, plates, seamless or fusion-welded tubular products with filler metal added and shall conform to the the chemical requirements of ASTM A 234. Unless otherwise specified, carbon steel plates may be either coarse grain or fine grain practice.

Manufacture

Forging or shaping operations are performed by hammering, pressing, piercing, extruding, upsetting, rolling, bending, machining, or by a combination of two or more of these operations. The forming process shall be applied so that it will not produce injurious imperfections in the fittings.

Heat Treatment

Hot-formed WPB fittings, upon which the final forming operation is completed at a temperature above 1150°F and below 1800°F, need not be heat treated. Cold-Formed WPB fittings, upon which the final forming operation is completed at a temperature below 1150°F, shall be normalized, or shall be stress relieved at 1100°F to 1275°F.

Chemical requirements (in %):

Carbon	Manganese	Phosphorus (max)	Sulfur (max)
.30 max	.29-1.06	.050	.058

Silicon	Chromium	Molybdenum	Nickel	Copper
.10 min	.40 max	.15 max	.40 max	.40 max

Vanadium	Columbium
.08 max	.02 max

Mechanical requirements:

Tensile Strength		60,000-85,000 psi
Yield Strength (min)		35,000 psi
Elongation	- Longitudinal:	22%
	- Transverse:	14%

Dimensions

Butt-welding fittings and butt-welding short radius elbows and returns purchased in accordance with this specification shall conform to the dimensions and tolerances given in the latest revision of ANSI B16.9 and B16.28, respectively.

Certification

When requested by the purchaser, the manufacturer shall provide a certificate of compliance to this specification. If requested to provide test reports, the manufacturer shall also provide the following where applicable:

* Chemical analysis results. When the amount of an element is less than .02%, the analysis for that element is reported as "<0.02%."
* Tensile property results, report the yield strength and ultimate strength in ksi [or MPa] and elongation in percent,
* Hardness acceptable in accordance with Section 10 of ASTM A-234,
* Seamless or Welded,
* Type of Heat Treatment, if any,
* Starting material, specifically pipe, plate, etc.,
* Statement regarding radiographic or ultrasonic examination.
* Any supplemental testing required by the purchase order.

Product Marking

All fittings shall have the prescribed information stamped or otherwise suitable marked on each fitting in accordance with ASTM A 234/MSS SP-25. A Weldbend fitting is marked as follows: Weldbend's Name, Nominal Pipe Size, Pipe Wall Thickness Designation, Material Grade (WPB/WPC) and Heat Identification Number.

Note: All information contained in this document, and for a complete description of all requirements, refer to ASTM A 105. Sheets are subject to change without notice.

2.□□ □□ ELD □LANGED ABOVE GROUND

WELDBEND®

Even with all the advances in technology today, the wholly welded piping system has for decades remained the best choice for use in high pressure and high temperature application. Many piping jobs in schools, industrial plants, refineries, and factories have benefited from the inherent advantages of a completely welded system. It becomes a closed container joining pipes, valves, fittings, and flanges. A welded joint actually becomes part of the pipe, minimizing leak potential. This provides greater margins of safety, especially under conditions of high internal pressures. Additionally, welding fittings form a continuous metal structure with the pipe, adding forged-in strength to any piping system. Furthermore, smooth forged flanges simplify insulation and take up less space.

ASTM A 105

Scope

This standard covers forged carbon steel piping components for ambient- and higher-temperature service in pressure systems. Flanges are ordered either to dimensions specified by the purchaser or to dimensional specifications such as ASME 16.5 and API 6A. Forgings made to ASTM A 105 are normally limited to a maximum weight of 10,000 lb.

Materials

Weldbend flanges are made by hammering, pressing, rolling and/or machining cast or forged bars, billets or slabs. These adhere to the extent described in the following sections.

Manufacture

ASTM A 105 covers the requirements for forged steel components as finished products only.
The requirements for raw materials are covered by the standards specified in Section 2: Referenced Documents of ASTM A 105.

Heat Treatment

Heat treatment is not a mandatory requirement of this specification except for the following piping components:
* Flanges above Class 300,
* Flanges of special design where the design pressure at the design temperature exceeds the pressure-temperature ratings of Class 300, Group 1.1,
* Flanges of special design where the design pressure or design temperature is not known.

Heat treatment, when required by the above, shall be annealing, normalizing, normalizing and tempering, or quenching and tempering in accordance with ASTM A 961.

Flange Summary Data Sheet

Chemical requirements (in %):

Carbon	Manganese	Phosphorus (max)	Sulfur (max)
.35 max	.60-1.05	.035	.040

Silicon	Copper	Nickel	Chromium
.10-.35	.40 max	.40 max	.30 max

Molybdenum	Vanadium	Columbium
.12 max	.08 max	.02 max

Mechanical requirements:

Tensile Strength (min)	70,000 psi
Yield Strength (min)	36,000 psi
Basic minimum elongation for walls 5/16 in. and over in thickness, strip tests.	30%
Reduction of area (min)	30%
Hardness, HB (max)	187

Dimensions

Weldbend flanges are manufactured in accordance with ASME B 16.5 (24" NPS and smaller) and ASME B 16.47 (26" - 60" NPS).

Certification

For forgings made to specified dimensions agreed upon by the purchaser, and for forgings made to dimensional standards, the application of identification marks, as required by ASTM A 961, shall be the certification that the forgings have been furnished in accordance with the requirements of this standard. The specification designation included on test reports shall include the year of issue and revision letter, if any.
Test Reports: When test reports are required, Weldbend will also provide the following, if applicable:
*Type of heat treatment,
*Tensile property results, i.e., yield strength and ultimate strength in ksi, elongation and reduction in area, in percent,
*Chemical analysis results,
*Hardness results, and,
*Any supplementary testing required by the purchase order.

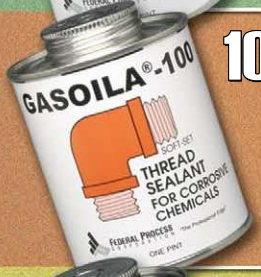
Product Marking

All flanges shall have the prescribed information stamped or otherwise suitable marked on each flange in accordance with the Standard/MSS SP-25. A Weldbend flange is marked as follows:
Weldbend's Name, Nominal Pipe Size, A105/SA105, Bore Designation, Heat Identification Number and manufacture date.

Note: All information contained in this document, and for a complete description of all requirements, refer to ASTM A 105. Sheets are subject to change without notice.

Quick and Easy Sealant Reference Guide

1.09 STEEL PIPE HTREADED JOINING MATERIALS

	TYPE	APPLICATIONS	USED BY	USED ON	APPROVALS
 **Soft-Set** · General Purpose, Top-selling Sealant · Perfect for New Pipes · Stays Pliable in Cold Temperatures · Non-Hardening, · Non-Separating · Non-Toxic	Blue Gray Paste with PTFE	Water, Steam, Natural Gas, LPG, Propane, Gasoline, Butane *Not for Use with Oxygen systems	• Contractors • Plumbers • Gas Utilities • Service Station Installers • Manufacturing Plants	All Metals and Most Plastics	CSA, UL NSF 16 NSF 14
 **E-Seal** · Specifically for E10 and E85 · Stays Pliable in Cold Temperatures · Non-Hardening, · Non-Separating · Non-Toxic	Green Paste with PTFE	Ethanol Blended Gasoline, including E10 and E85 (*NOT 100% Ethanol applications) *Not for Use with Oxygen systems	• Gas Station Installers	All Metals	UL
 **Hard-Set** · Hard Setting Sealant · Assembles Threaded Joints Permanently · Excellent for Coating Surfaces. · Impervious to Gasoline · Flammable	Red Varnish	Aliphatic, Aromatic and Chlorinated Solvents *Not for Use with Oxygen systems	• Auto Industry to Seal Drive Trains, Coat parts • Contractors Installing Underground Piping, Steam Systems • Marine Manufacturers	All Metals, Rubber, Porcelain, Wood	UL
 **PLS-2** · Ideal for Demanding Pneumatic and LPG Applications	Gray Paste with PTFE	Chlorine, Diesel, Jet Fuel, Steam, Dilute Acid *Not for Use with Oxygen systems	• Chemical Plants, • Gas Utilities • Refineries • Airlines, Hydraulics • Tank Trucks	All Metals and Most Plastics	CSA UL
 **100** · Ideal for use on Systems with 100% Methanol, Ethanol, Alcohol and Highly Corrosive Chemicals · Soft Setting	Black Paste	High Concentrations of Alcohol, Solvents, Caustic Chemicals 100% Ethanol 100% Methanol *Not for Use with Oxygen systems	• Pharmaceutical • Chemical Companies	All Metals and Fiberglass *Not for Use on Plastic Pipe *Threads must be Clean Prior to use	
 **JC-30** · For Damaged, Irregular, Mis-cut and Straight Threads · Vegetable Oil Base · Thick Consistency, 10-15% more Solids than Conventional Sealants	Oyster White Paste with PTFE	Water, Steam, Natural Gas, LPG, Propane, Gasoline, Freon 22 and Hydraulic Fluids *Not for Use with Oxygen systems	• Plumbers, • Gas Utilities • Manufacturing Plants	All Metals	UL
 **NT** · Soft Setting for Applications Requiring Grit-Free, Non-PTFE Compound · No Fillers to Contaminate Gas Lines · For use when Non-PTFE Sealant is Preferred	Dark Blue Paste without PTFE	Water, Steam, LPG, Propane, Gasoline *Not for Use with Oxygen systems	• Propane Companies • Petroleum Companies	All Metals and Most Plastics	NSF 16 NSF 14
 **FasSeal ATS** Anaerobic Thread Sealant that cures in Absence of Oxygen · Ideal for Refrigeration or other High Vibration Applications · High Speed Curing Time · Vibration Resistant.	Smooth White Paste with PTFE	Air Conditioning Lines, Hydraulic-Pneumatic Lines, Air Compressor Hoses, Sprinkler Installations *Not for Use with Oxygen systems	• HVAC • Refrigeration Companies	Metals *Not for Use on Plastic Pipe	

Phone: 800-846-7325 - Fax: 800-797-2060

FEDERAL PROCESS CORPORATION

#GCC2 Feb - 2007

"Apollo" Valves

SUBMITTAL SHEET

80-100 Series

UL Listed Shut-Off **Bronze Ball Valve**

Job Name:	
Job Location:	
Engineer:	
Contractor:	
Tag:	
PO Number:	
Representative:	
Wholesale Distributor:	

DESCRIPTION

The Apollo® 80 Series Bronze Ball Valve is UL Listed and designed as a safe shut off valve for LP gas, natural gas, flammable liquids and heated oil.

FEATURES

- Adjustable Packing Gland
- Blow-Out Proof Stem Design
- RPTFE Seats and Seals
- Chromium Plated Ball

PERFORMANCE RATING

- Maximum Pressure: 600 psi CWP, 250 psi LP Gas, 150 psi SWP
- Vacuum Service to 29 in. Hg

OPTIONS & SIZES

- (-07) Tee Handle, Steel (1/4" to 3")
- (-27) SS Latch-Lock Lever & Nut (1/4" to 3")

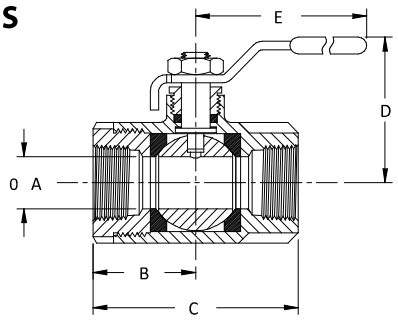
APPROVALS

- MSS SP-110; Ball Valves
- Federal Specification: WW-V-35C, Type: II, Composition: BZ, Style: 3
- CRN: OC10908.5C
- Guide YSDT: LP-Gas Shut-Off Valve
- Guide YRPV: Gas Shut-Off Valve for use with natural and manufactured gases
- Guide YRBX: Flammable liquid shutoff valve
- Guide MHKZ: No. 6 oil at 250°F

STANDARD MATERIALS LIST

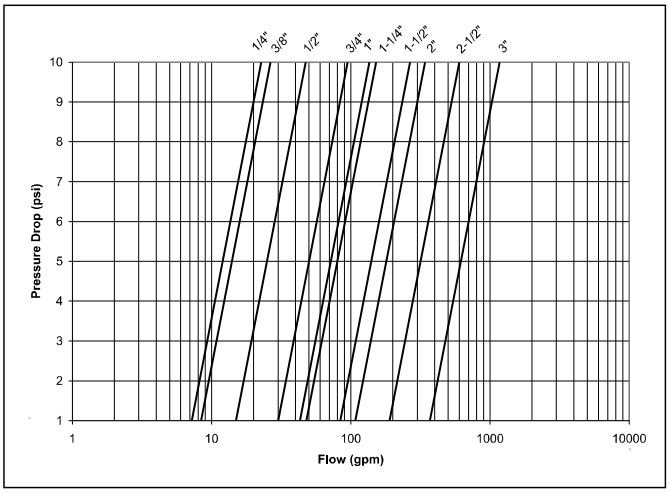
Part Name	Material
Lever and Grip	Steel, Zinc Plated w/ Vinyl
Stem Packing	RPTFE
Stem Bearing	RPTFE
Ball	B16, Chrome Plated or B283, C37700 Chrome Plated
Seat (2)	RPTFE
Retainer	B16 (1/4" to 1"), B584-C84400 (1-1/4" to 3") or B283, C37700
Gland Nut	B16
Stem	B16
Lever Nut	Steel, Zinc Plated
Body Seal (1-1/4" to 3")	PTFE
Body	B584-C84400

DIMENSIONS



Model Number	Size (in.)	Dimensions (in.)					Wt. (lbs.)
		A	B	C	D	E	
80-101	1/4"	0.37	1.03	2.06	1.75	3.87	0.60
80-102	3/8"	0.37	1.03	2.06	1.75	3.87	0.56
80-103	1/2"	0.50	1.12	2.25	1.81	3.87	0.63
80-104	3/4"	0.68	1.50	3.00	2.12	4.87	1.39
80-105	1"	0.87	1.68	3.37	2.25	4.87	1.72
80-106	1-1/4"	1.00	2.00	4.00	2.62	5.50	3.26
80-107	1-1/2"	1.25	2.18	4.37	2.87	5.50	4.57
80-108	2"	1.50	2.34	4.68	3.06	5.50	5.56
80-109	2-1/2"	2.50	3.25	6.50	4.12	8.00	17.25
80-100	3"	2.50	3.37	6.75	4.12	8.00	18.60

FLOW CHARACTERISTICS



Apollo Valves, Manufactured by **Conbraco Industries, Inc.**
701 Matthews Mint-Hill Road, Matthews, NC 28105 USA
www.**apollovalves**.com | (704) 841-6000

FLOWSERVE

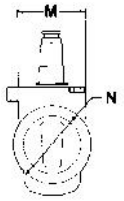
CAST IRON NON LUBRICATED PLUG VALVE

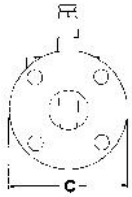
Super Nordstrom Two-Bolt Cover-Type Iron Plug Valves

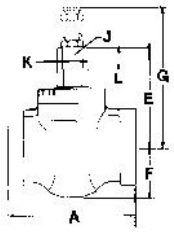
Short Pattern (Gate Length)

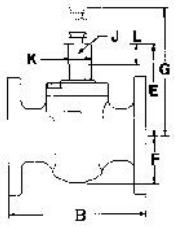
200 CWP (13.8 bar)
400 psig (27.6 bar) Test

Figure 142 Threaded, Wrench Operated, Sizes ½ to 4
Figure 143 Flanged, Wrench Operated, Sizes 1 to 5









Size	NPS	½	¾	1	1¼	1½	2	2½	3	4	5
	DN	15	20	25	32	40	50	65	80	100	125
End-to-end, threaded, Figure 142	A	4.50 114	4.50 114	4.50 114	5.00 127	5.00 127	5.88 149	7.00 178	7.62 194	9.00 229	
End-to-end, flanged, Figure 143	B			5.50 140	6.50 165	6.50 165	7.00 178	7.50 191	8.00 203	9.00 229	10.00 254
Diameter of flange	C			4.3 109	4.6 117	5.0 127	6.0 152	7.0 178	7.5 191	9.0 229	10.0 254
Center to top of stem	E	3.8 97	3.8 97	3.8 97	4.1 104	4.1 104	4.7 119	4.7 119	5.6 142	6.3 160	6.3 160
Center to bottom of body	F	1.9 48	1.9 48	1.9 48	2.1 53	2.1 53	2.4 61	2.4 61	3.4 86	4.0 102	4.0 102
Clearance required to remove sealant fitting	G	5.5 140	5.5 140	5.5 140	5.8 147	5.8 147	6.4 163	6.4 163	7.2 183	8.0 203	8.0 203
Width of stem flats	J	.81 21	.81 21	.81 21	1.00 25	1.00 25	1.00 25	1.00 25	1.25 32	1.25 32	1.25 32
Diameter of stem	K	1.06 27	1.06 27	1.06 27	1.38 35	1.38 35	1.38 35	1.38 35	1.75 44	1.75 44	1.75 44
Height of stem flats	L	.9 23	.9 23	.9 23	1.0 25	1.0 25	1.0 25	1.0 25	1.3 33	1.3 33	1.3 33
Extreme width of body, Figure 142	M	2.6 66	2.6 66	2.6 66	3.2 81	3.2 81	3.2 81	3.2 81	4.0 102	4.8 122	
Diameter of hub, Figure 142	N	2.3 58	2.3 58	2.3 58	2.9 74	2.9 74	3.6 91	4.3 109	5.2 132	6.4 163	
Size of Sealant Stick	—	B	B	B	B	B	B	B	B	B	B
Size of wrench	—	SN-1	SN-1	SN-1	SN-2	SN-2	SN-2	SN-2	SN-4*	SN-4*	SN-4*
Length of wrench	—	7.0 178	7.0 178	7.0 178	10.5 267	10.5 267	10.5 267	10.5 267	17.5 445	15.0 381	15.0 381
Weight (approx.), Figure 142	—	6 3	6 3	6 3	9 4	9 4	13 6	17 8	29 13	48 22	
Weight (approx.), Figure 143	—			9 4	14 6	14 6	20 9	25 11	38 17	65 29	80 36

Flanges are drilled to ASME Class 125 Cast Iron Flange Standard Template. For drilling and bolting data, see page 45.

Figures 142 and 143 valves conform to the following standards where applicable: ASME B1.20.1; ASME B16.1; ASME B16.10; API 5B; ASTM A126, Class B; and MSS SP-78. See page 38.

Figure 143 face-to-face lengths are interchangeable with ASME Class 125 and API 175 CWP Cast Iron Gate Valves.

Figures 142 and 143 valves Size 5 (125 mm) and smaller are not recommended for temperatures above +200°F (+93°C).

** Use the longer SN-3 wrench for valves used in cold climates such as Canada.*

"Apollo" Valves SUBMITTAL SHEET

77V-LF Series

Press End Forged Ball Valve | Small Diameter 1/2" - 2"

LEAD FREE

2.13 - 2 - BALL VALVES

"Apollo" PRESS

LEAD FREE CERTIFIED

5 YEAR WARRANTY MADE IN USA

UPC

Job Name:	
Job Location:	
Engineer:	
Contractor:	
Tag:	
PO#:	
Rep:	
Wholesale Dist.:	

DESCRIPTION

The APOLLOPRESS® 77VLF Series lead free* two-piece press ball valve is ideal for installation in most plumbing and heating systems, including potable water. Now with Leak Before Press® feature and 300 psig maximum working pressure. Proudly Made in the USA.

FEATURES

- Lead Free*, ANSI 3rd Party Certified and Listed
- Full-Port Flow
- Superior RPTFE Seats and Packing
- Adjustable Stem Packing
- Ridgid® XL Press Tool Compatible
- Leak Before Press® Technology
- Blowout-Proof Stem
- Corrosion Resistant Materials
- Silicone Free Assembly
- 100% Factory Tested
- **Made in USA, ARRA Compliant**

PERFORMANCE RATING†

- Maximum Operating Pressure: 300 psi
- Temperature Range: 0°F - 250°F

†APOLLOPRESS® connectors are designed for direct mechanical connection to ASTM B88-Type K, L, and M copper tubing in the hard drawn condition. Press connectors are not suitable for steam or flammable gas service.

APPROVALS

- MSS SP-110 Ball Valves
- NSF/ANSI 61 Water Quality
- NSF/ANSI 372 Lead Free
- IAPMO/ANSI Z1157 Ball Valves
- Directive 2011/65/CE (RoHS)

APPROVED APPLICATIONS

- Water Including Potable Water
- Hydronic Heating (90% glycol max)
- Low Pressure Steam, 15 psi max
- Not Suitable for Flammable Gas Service
- Designed for Direct Mechanical Connection to ASTM B88-Type K, L, and M Copper Tubing in the Hard Drawn Condition
- Not Compatible with Soft Annealed Copper Tubing

OPTIONS

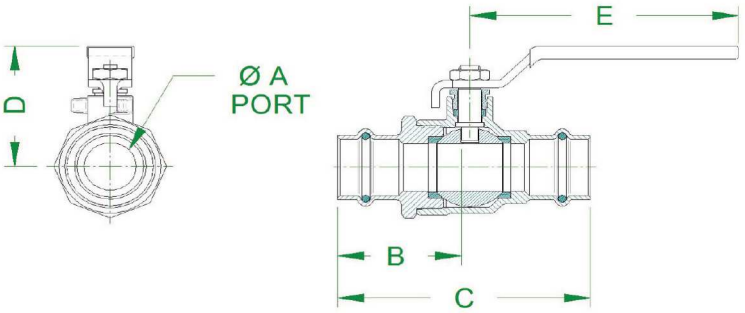
- (-01) Standard Lever Handle
- (-04) 2-1/4" Stem Extension 1/2" - 2-1/2"
- (-07) Tee Handle 1/2" - 2"
- (-11) Therma-Seal™
- Insulating Tee Handle 1/2" - 2"
- (-27) Locking Handle SS 1/2" - 2-1/2"
- 77V140 Series – SS Ball & Stem
- 77V-LF Large Diameter 2-1/2" - 4"

STANDARD MATERIALS LIST

BODY	Lead Free Brass, C27451
SEAT	RPTFE
BALL	Lead Free Brass, C27451, Chrome Plated
STEM PACKING	RPTFE
NUT	Corrosion Resistant Plated Steel
STEM	Lead Free Brass, C27451
RETAINER	Lead Free Brass, C27451
HANDLE	Plated Steel / Insulated Polyvinyl
GLAND	Brass, ASTM B16, C36000
O-RING SEALS	EPDM

DIMENSIONS

MODEL NUMBER	SIZE (IN.)	DIMENSIONS (IN.)					WT. (LB.)
		A	B	C	D	E	
77VLF10301	1/2"	0.50	1.57	2.89	1.66	2.85	0.4
77VLF10401	3/4"	0.75	1.90	3.63	1.91	3.86	0.9
77VLF10501	1"	1.00	2.20	3.88	2.11	3.86	1.2
77VLF10601	1-1/4"	1.25	2.23	4.22	2.44	4.75	2.3
77VLF10701	1-1/2"	1.50	2.84	5.45	2.91	5.42	3.4
77VLF10801	2"	2.00	3.40	6.57	3.69	7.77	6.0



**LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.*

"Apollo" Valves

SUBMITTAL SHEET

LEAD FREE

77FLF-100 Series

NEW

Full Port Threaded **Brass Ball Valve**

Job Name:	
Job Location:	
Engineer:	
Contractor:	
Tag:	
PO Number:	
Representative:	
Wholesale Distributor:	

DESCRIPTION

The Apollo 77FLF-100 Series is a Lead Free*, full port forged brass ball valve suitable for a wide range of plumbing and heating applications, including potable water. These NPT threaded, 2-piece valves combine reliable operation with maximum economy. Valves include most pertinent agency approvals. Proudly Made in the USA.

FEATURES

- Lead Free* Materials and Approvals
- Heavy Pattern Forged Design
- Full-Port Flow
- Superior RPTFE Seats and Packing
- Adjustable Stem Packing
- Blow-Out Proof Stem
- Dezincification Resistant Materials
- 100% Factory Tested
- Silicone Free Assembly
- **Made in USA,** ARRA Compliant

OPTIONS

- (-01) Standard Lever
- (-04) 2-1⁄4" Stem Extension (1/4" – 2-1/2")
- (-07) Tee Handle (1/4" – 2")
- (-11) Therma-Seal™ Insulating Tee Handle (1/4" – 2")
- (-27) Locking Handle SS (1/4" – 2-1/2")
- 77FLF140 Series – SS Ball & Stem

PERFORMANCE RATING

- Rating: 600 CWP (1/4" – 2")
- Rating: 400 CWP (2-1/2" – 4")
- Steam Rating: 150 psi SWP
- Temperature Range: 0°F - 400°F
- Vacuum Service to 29 in. Hg

APPROVALS

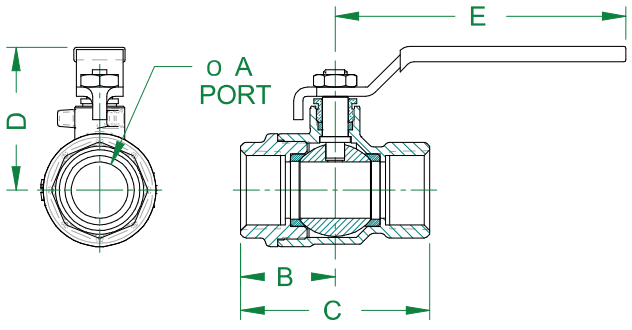
- MSS-SP-110 Ball Valves
- IAPMO IGC-157 Ball Valves
- CGA 3.16 (125 PSI)
- CGA CR91-002 (5 PSI)
- ANSI Z21.15/CSA 9.1 (1/2 PSI)
- ASME B16.44 (5 PSI)
- ASME B16.33 (125 PSI) (1/2" – 2")
- FM 1140 (1/4" – 2")
- UL Guides: YSDT, MHKZ, YQNZ, YRBX, YRPV
- UL Guide VQGU (1/4" – 2")
- NSF/ANSI 61 Section 8, Annex G
- NSF/ANSI 372

STANDARD MATERIALS LIST

Part Name	Material
Body	Lead Free Brass, C27451
Seat	RPTFE
Ball	Lead Free Brass, C27451, Chrome Plated (4" is SS)
Stem Packing	RPTFE
Nut	Corrosion Resistant Plated Steel
Stem	Lead Free Brass, C27451
Retainer	Lead Free Brass, C27451
Handle	Plated Steel / Insulated Polyvinyl
Gland	Brass, ASTM B16, C36000

DIMENSIONS

Part Number	Size (in.)	Dimensions (in.)					Wt. (lbs.)
		A	B	C	D	E	
77FLF-101-01	1/4"	0.38	0.81	1.62	1.61	2.85	0.3
77FLF-102-01	3/8"	0.38	0.85	1.70	1.61	2.85	0.3
77FLF-103-01	1/2"	0.50	1.14	2.25	1.66	2.85	0.5
77FLF-104-01	3/4"	0.75	1.26	2.51	1.91	3.86	0.8
77FLF-105-01	1"	1.00	1.60	3.20	2.11	3.86	1.3
77FLF-106-01	1-1/4"	1.25	1.73	3.46	2.44	4.75	2.1
77FLF-107-01	1-1/2"	1.50	2.00	4.00	2.91	5.42	3.2
77FLF-108-01	2"	2.00	2.37	4.74	3.69	7.77	5.6
77FLF-109-01	2-1/2"	2.50	2.99	5.98	4.14	7.77	12.8
77FLF-100-01	3"	3.00	3.52	7.05	5.03	9.92	19.7
77FLF-14A-01	4"	4.00	3.83	7.65	5.70	14.78	25.5



** LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.*

Apollo Valves, Manufactured by **Conbraco Industries, Inc.**
701 Matthews Mint-Hill Road, Matthews, NC 28105 USA
www.**apollovalves**.com | (704) 841-6000

AALBERTS INDUSTRIES

77FLF-200 Series

Full Port Solder End Brass Ball Valve

LEAD FREE

SUBMITTAL SHEET

"Apollo" Valves

Job Name:	
Job Location:	
Engineer:	
Contractor:	
Tag:	
PO#:	
Rep:	
Wholesale Dist.:	

DESCRIPTION

The **Apollo® 77FLF-200 Series** is a lead free* full port forged brass ball valve ideal for a wide range of plumbing and heating applications, including potable water. These two piece style solder connection valves carry multi-agency approvals and are deigned to provide reliable operation at a competitive price. The 77FLF-200 series valve is intended to be soft soldered into lines without disassembly. Proudly Made in the USA.

FEATURES

- EZ-Solder™ Lead Free Materials**/Certification
- Heavy Pattern Forged Design
- Full Port Flow
- Superior RPTFE Seats and Packing
- Adjustable Stem Packing
- Blowout-Proof Stem
- Corrosion Resistant Materials
- Silicone Free assembly
- 100% Factory Tested
- Made in USA, ARRA Compliant

PERFORMANCE RATING

- Rating: 600 CWP (1/4" – 2")
- Rating: 400 CWP (2-1/2" – 4")
- Temperature Range: 0°F - 400°F
- Vacuum Service to 29 in. Hg

APPROVALS

- MSSP-SP-110 Ball Valves
- IAPMO IGC-157 Ball Valves
- FM 1140 (1/2" -2")
- NSF/ANSI 61 Section 8, Annex G
- NSF/ANSI 372

OPTIONS

- (-01) Standard Lever
- (-04) 2-1/4" Stem Extension 1/4" – 2-1/2"
- (-07) Tee Handle 1/4" – 2"
- (-11) Therma-Seal™ Insulating Tee Handle 1/4" – 2"
- (-27) Locking Handle SS 1/4" – 2-1/2"
- 77FLF240 Series – SS Ball & Stem

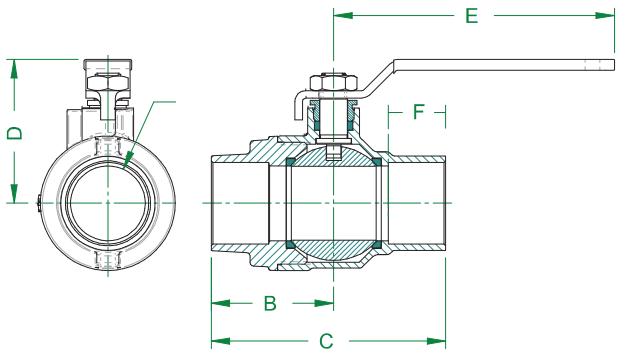
STANDARD MATERIALS LIST

BODY	Forged Lead Free Brass, C27451
SEAT	Reinforced RPTFE
BALL	Lead Free Brass, C27451, Chrome Plated
STEM PACKING	Reinforced RPTFE
NUT	Corrosion Resistant Plated Steel
STEM	Lead Free Brass, C27451
RETAINER	Lead Free Brass, C27451
HANDLE	Plated Steel / Insulated Polyvinyl
GLAND	Brass, ASTM B16, alloy C36000

**77FLF-2xx intended for soft solder installation using solders with melting temperature of < 500°F.

DIMENSIONS

Model Number	Size (in.)	Dimensions (in.)						Wt. (lbs.)
		A	B	C	D	E	F	
77FLF-203-01	1/2"	0.50	1.37	2.37	1.66	2.85	0.50	0.4
77FLF-204-01	3/4"	0.75	1.72	3.13	1.91	3.86	0.75	0.9
77FLF-205-01	1"	1.00	2.01	3.73	2.11	3.86	0.91	1.3
77FLF-206-01	1-1/4"	1.25	2.07	3.97	2.44	4.75	0.97	2.0
77FLF-207-01	1-1/2"	1.50	2.42	4.69	2.91	5.42	1.09	3.3
77FLF-208-01	2"	2.00	2.91	5.82	3.69	7.77	1.34	5.6
77FLF-209-01	2-1/2"	2.50	3.68	7.05	4.14	7.77	1.48	11.6
77FLF-200-01	3"	3.00	4.26	8.15	5.03	9.92	1.67	19.3
77FLF-24A-01	4"	4.00	4.82	9.57	5.70	14.78	2.16	25.6



*LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.

AALBERTS INDUSTRIES

"Apollo"® Valves
SUBMITTAL SHEET

163T-PRLF

200 CWP, Bronze, Swing Check Valve

LEAD FREE

2.13- 2- SWING CHECK

"Apollo" PRESS

LEADFREE CERTIFIED

5 YEAR WARRANTY MADE IN USA

ISO 9001:2008 REGISTERED

Job Name:	
Job Location:	
Engineer:	
Contractor:	
Tag:	
PO#:	
Rep:	
Wholesale Dist.:	

DESCRIPTION

The lead free* **APOLLOPRESS® Model 163T-PRLF (Series 61YLF) Swing Check** with press connections is a proven combination that provides economical installation and reliable service for potable water applications. These valves are cast, machined, assembled, and tested in South Carolina using proven ASTM quality materials.

FEATURES

- Fast, Reliable, Economical Press Installation
- Ridgid® XL Press Tool Compatible
- Leak Before Press® Technology
- Quick Press End Connection
- Renewable PTFE Seat Disc
- Dezincification Resistant
- **Made in USA, ARRA Compliant**

APPROVALS

- MSS SP-80 Design and Testing
- MSS SP-139 Copper Alloy Gate, Globe, & Check Valves
- NSF/ANSI 61 Water Quality
- NSF/ANSI 372 Lead Free
- CRN 0C14667.5

PERFORMANCE RATING

- Maximum Pressure: 200 psi (13.8 bar) non-shock
- Temperature Range: 0°F - 250°F (-18°C - 121°C)

APOLLOPRESS® connectors are designed for direct mechanical connection to ASTM B88-Type K, L, and M copper tubing in the hard drawn condition. Press connectors are not suitable for steam or flammable gas service.

Not recommended for applications which may induce pulsation or repetitive vibration. See Installation Manual for details.

STANDARD MATERIALS LIST

BODY	ASTM B584 C89836 Bronze
CAP	ASTM B584 C89836 Bronze
CONNECTOR HOUSING	UNS C27450 Brass
CONNECTOR O-RING	NSF grade EPDM
HANGER	304 Stainless Steel or ASTM B584 C89836 Bronze
PIN	Stainless Steel
SEAT	PTFE
PLUG	UNS C27450 Brass

DIMENSIONS

MODEL NO.	PART NO.	SIZE (IN.)	HEIGHT (IN.)	LENGTH (IN.)	CV (GPM)	WEIGHT (LB.)
163T12-PRLF	61YLF-203-T1PR	1/2"	1.65	4.3	7.0	.78
163T34-PRLF	61YLF-204-T1PR	3/4"	1.9	5.1	12.0	1.8
163T1-PRLF	61YLF-205-T1PR	1"	2.26	5.9	28.6	2.5
163T114-PRLF	61YLF-206-T1PR	1-1/4"	2.99	7.0	39.0	4.4
163T112-PRLF	61YLF-207-T1PR	1-1/2"	2.99	7.75	56.0	4.5
163T2-PRLF	61YLF-208-T1PR	2"	3.74	8.9	152.0	7.0

For liquids the flow coefficient - Cv - expresses the flow capacity in gallons per minute (GPM) of 60°F water with a pressure drop of 1 psi (lb/in²).

**LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.*

aalberts integrated piping systems

"Apollo"® Valves
SUBMITTAL SHEET

161T-LF Series

Class 125, Bronze Disc, NPT Swing Check

LEAD FREE

Job Name:	
Job Location:	
Engineer:	
Contractor:	
Tag:	
PO#:	
Rep:	
Wholesale Dist.:	

DESCRIPTION

The **lead free* Apollo® Model 161T-LF (61YLF Series) Swing Check** provides a reliable, long lasting, "Made in the USA" alternative to globally sourced check valves for potable water service. These valves are cast, machined, assembled, and tested in South Carolina using proven ASTM quality materials. The Apollo® swing check may be installed in either horizontal or vertical orientation with upward flow.

FEATURES

- Dezincification Resistant Bronze Construction
- Renewable Bronze Seat Disc
- 100% Factory Tested per MSS SP-139
- NPT Connection
- **Cast, Machined and Assembled in the USA**
- ARRA Compliant

PERFORMANCE RATING

- Cold Working Pressure: 200 psi (13.8 Bar) at 100°F
- Saturated Steam: 125 psi (8.6 Bar) at 353°F
- Temperature Range: -20°F to 406°F

APPROVALS

- MSS SP-80 Design & Tested
- MSS SP-139, "Copper Alloy Gate, Globe, & Check Valves"
- NSF/ANSI 372 Lead Free, 3rd Party Certified
- ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"
- CSA B51 CRN 0C14667.

PRECAUTIONARY NOTE:

Not recommended for applications which may induce pulsation or repetitive vibration. See Installation Manual for details.

STANDARD MATERIALS LIST

BODY	ASTM B584-C89836 Bronze
CAP	ASTM B584-C89836 Bronze
HANGER	304 Stainless Steel or ASTM B584 C89836 Bronze
PIN	304 Stainless Steel
SEAT	C27451 Lead Free* Brass
PLUG	ASTM B16 Brass

DIMENSIONS

MODEL NUMBER	PART NUMBER	SIZE (IN.)	HEIGHT (IN.)	LENGTH (IN.)	WEIGHT (LB.)	CV (GPM)
161T14LF	61YLF-191-01	1/4"	1.51	2.14	.64	2.6
161T38LF	61YLF-192-01	3/8"	1.51	2.14	.62	4.5
161T12LF	61YLF-193-01	1/2"	1.65	2.48	.73	7.0
161T34LF	61YLF-194-01	3/4"	1.9	2.94	1.1	12.0
161T1LF	61YLF-195-01	1"	2.26	3.57	1.7	28.6
161T114LF	61YLF-196-01	1-1/4"	2.99	4.50	3.4	39.0
161T112LF	61YLF-197-01	1-1/2"	2.99	4.50	3.1	56.0
161T2LF	61YLF-198-01	2"	3.74	5.25	5.5	152.0

Warning: Do not use in reciprocating compressor service.

**LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.*

"Apollo" Valves SUBMITTAL SHEET

59LF-PR Series

Bronze Wye-Strainer

LEAD FREE

2.16 - STRAINERS

"Apollo" PRESS

5 YEAR WARRANTY MADE IN USA

LEAD FREE CERTIFIED

Job Name:	
Job Location:	
Engineer:	
Contractor:	
Tag:	
PO#:	
Rep:	
Wholesale Dist.:	

DESCRIPTION

The lead free* APOLLOPRESS® 59LF Series Strainers with Press connections are designed to protect potable piping systems from unwanted foreign particles with minimum pressure loss. The valves are built for long reliable service with proven ASTM grade materials including a lead free* bronze body and stainless steel strainer.

FEATURES

- Fast, Reliable, Economical Press Installation
- Ridgid® XL Press Tool Compatible
- Leak Before Press® Technology
- Self-Aligning Screen Design
- Blow-off Ball Valve Option
- Lead Free Bronze and Brass Construction
- **Made in USA, ARRA Compliant**

PERFORMANCE RATING†

- Maximum Pressure:
  300 psi (17.2 bar) non-shock
- Temperature Range:
  0°F - 250°F (-18°C - 121°C)

†APOLLOPRESS® connectors are designed for direct mechanical connection to ASTM B88-Type K, L, and M copper tubing in the hard drawn condition. Press connectors are not suitable for steam or flammable gas service.

APPROVALS

- NSF/ANSI 372 - Lead Free
- CRN 0E8959.5C

OPTIONS

- (01) – 50 Mesh (Standard 1/2" Models)
- (01) – 20 Mesh (Standard 3/4" - 2" Models)
- (02) – Tapped Cap
- (P2) – Tapped Cap with Plug
- (06) – Tapped cap with Ball Valve
- (E1) – 20 Mesh (for 1/2 " Model)
- (B1)– 60 Mesh
- (C1)– 80 Mesh
- (H1)– 100 Mesh
- (59-PR) Non Lead-Free APOLLOPRESS®

STANDARD MATERIALS LIST

BODY	ASTM B584 C89836 Bronze
CAP	UNS C27450 Brass
CONNECTOR HOUSING	UNS C27450 Brass
CONNECTOR O-RING	NSF grade EPDM
SCREEN	302 Stainless Steel
CAP SEAL (1/2")	Teflon® O-Ring
CAP SEAL (3/4" – 2")	PTFE Gasket

DIMENSIONS

PART NUMBER	SIZE (IN.)	LENGTH (IN.)	CV	WT. (LB.)
59LF-003-01PR	1/2"	4.75	5	1.0
59LF-004-01PR	3/4"	6.1	15	2.0
59LF-005-01PR	1"	7.25	28	3.0
59LF-006-01PR	1-1/4"	7.62	55	3.8
59LF-007-01PR	1-1/2"	8.25	70	5.7
59LF-008-01PR	2"	10.39	99	7.7

For liquids the flow coefficient - Cv - expresses the flow capacity in gallons per minute (GPM) of 60°F water with a pressure drop of 1 psi (lb/in²).

**LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.*

aalberts integrated piping systems

"Apollo"® Valves
SUBMITTAL SHEET

59LF Series

Model YB-LF - Bronze Wye-Strainer

LEAD FREE

2.16 LEAD FREE STRAINERS

5 YEAR WARRANTY MADE IN USA
LEADFREE CERTIFIED
ISO 9001:2008 REGISTERED

Job Name:	
Job Location:	
Engineer:	
Contractor:	
Tag:	
PO#:	
Rep:	
Wholesale Dist.:	

DESCRIPTION

The **Apollo® Lead Free* YB-LF (59LF) Series Heavy Pattern Strainers** are designed with large area screens to protect piping systems and process equipment from unwanted foreign particles with minimum pressure loss.

FEATURES

- Lead Free*
- 100% Factory Pressure Tested
- Removable Self-Aligning Screen Design
- Numerous Mesh and Blow-off Options including Blow-off Ball Valves
- ARRA Compliant
- **100% Cast, Machined and Assembled in the USA**

MODELS

- (59LF000) Female NPT Connection
- (59LF300) Solder Connection (1/2"-3")
- (59LF400) FNPT Inlet X Male NPT Out (3/4"-1")

APPROVALS

- NSF/ANSI 372 Lead Free
- CRN-0E 8959.5

PERFORMANCE RATING

- Working Pressure:
  CWP: 400 psi
  SWP: 125 psi
- Maximum Temperature: 353°F

OPTIONS

- (-E1) – 20 Mesh
- (-01) – Plain Cap
- (-B1) – 60 Mesh
- (-C1) – 80 Mesh
- (-H1) – 100 Mesh
- (-02) – Tapped Cap
- (-P2) – Tapped Cap with Plug
- (-06) – Tapped cap with Ball Valve (3/4" – 2" Only)

STANDARD MATERIALS LIST

BODY	Cast Bronze, ASTM Lead Free B584
CAP	Lead Free Bronze, UNS C27451 (1/8" - 1") Lead Free Bronze, ASTM B584 C89836 (1-1/4" - 4")
SCREEN	Stainless Steel, 304
O-RING (1-8" - 1/2")	PTFE
GASKET (3/4" - 4")	PTFE

DIMENSIONS

MODEL NUMBER	PART NUMBER	SIZE (IN.)	LENGTH (IN.)		CAP TAPPING (-02 SUFFIX)	NET SCREEN AREA (IN^2)	WT. (LB.)
			FNPT	MNPT			
YB18LF	59LF-000-01	1/8	2	NA	1/8 NPT	2.3	.44
YB14LF	59LF-001-01	1/4	2	NA	1/8 NPT	2.3	.42
YB38LF	59LF-002-01	3/8	2.69	NA	1/4 NPT	3.2	.78
YB12LF	59LF-003-01	1/2	2.69	NA	1/4 NPT	3.2	.75
YB34LF	59LF-004-01	3/4	4.25	NA	1/2 NPT	6.7	1.7
YB1LF	59LF-005-01	1	4.75	NA	3/4 NPT	10.8	2.7
YB114LF	59LF-006-01	1-1/4	5.13	NA	3/4 NPT	13.5	3.4
YB112LF	59LF-007-01	1-1/2	5.75	NA	1 NPT	19.0	5.3
YB2LF	59LF-008-01	2	6.66	NA	1-1/4 NPT	27.6	7.2
YB212LF	59LF-009-01	2-1/2	8.24	NA	1-1/4 NPT	41.0	11.3
YB3LF	59LF-010-01	3	9	NA	1-1/2 NPT	56.0	15.5
YB4LF	59LF-011-01	4	11.92	NA	1-1/2 NPT	98.0	30.7
59LF-400							
YBM34LF	59LF-404-01	3/4	NA	4.25	1/2 NPT	6.7	1.7
YBM1LF	59LF-405-01	1	NA	4.75	3/4 NPT	10.8	2.7

Model number and part number shown are for FNPT connections.

STANDARD SCREENS

SIZE (IN.)	SCREEN
1/8 to 1/2	50 Mesh
3/4 to 3	20 Mesh
4	.125 Perforation

**LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.*

aalberts integrated piping systems

59LF Series

Model YB-LF - Bronze Wye-Strainer

LEAD FREE

FLOW CURVES