AMERON
INTERNATIONAL
FIBERGLASS - COMPOSITE PIPE GROUP

Dualoy® 3000/L Installation

Installation Practices

for secondary containment
piping systems

Bulletin 8702

FP264J (11/07)

Table of Contents

i. Training for Ameron Dualoy® Piping Systems

1. Installation training for Ameron Dualoy 3000/L piping systems, including secondarily contained systems and Dualoy 3000/LCX, shall be done by an Ameron employee, sales representatve or distributor.
2. Training shall, at minimum, consist of a thorough review of the installation instructions (Bulletins, 7501, 8702 and/or 9903) as applicable for the systems on which the installer is to be certified. It is recommended that an installation video, (such as “Dualoy 3000/LCX Installation”) be used during the training session. Also recommended is an examination of the installation tools, a demonstration of the joint preparation and bonding and, if possible, a “hands-on” execution of the installation procedures for a sample connection.
3. Upon completion of the training, each individual being trained shall complete the written examination for the systems on which they are to receive qualification.
4. The examinations will be signed by the trainee and the instructor and forwarded to Ameron for grading and registering of the individual as a “Certified Installer.”
5. Ameron will issue a training certificate with the individual identified and will include their name on a registration list. Wallet-sized certificates and hard hat stickers may also be provided. Training certificates are valid for three years.

ii. Glossary & Abbreviations

SC – Secondary containment fittings or pipe
NV – Normal vent line from tank
PC – Primary Carrier
PS – Primary/Secondary combined into one unit
VR – Vapor recovery
MV – Motor vehicle fuels
CF – Concentrated fuels
HB – High blend fuels
AM – Aviation and marine fuels

iii. Pressure Ratings & Specifications of Products

Dualoy 3000/L pipe specifications and ratings

Pipe Size (inches)	Nominal O.D. (inches)	Wall Thickness (inches)	Weight lb/ft	Pressure Rating (inches)
2	2.38	.080	.5	200
3	3.50	.085	.7	200
4	4.50	.090	1.0	175
6	6.63	.120	1.9	140

Dualoy 3000/L couplings & adapters ratings

Pipe Size (inches)	Couplings (psig)	Adapters BxF (psig)	Adapters SxM (psig)	Adapters SxF (psig)
2	200	200	200	200
3	125	125	125	125
4	100	100	100	100
6	100	100	100	100

Dualoy 3000/L fittings & adapters ratings

Pipe Size (inches)	45˚,90˚ Elbows (psig)	Reducer Bushings (psig)	Tees (psig)	Adapters BxM (psig)
2	200	200	200	200
3	125	125	125	125
4	100	100	100	100
6	100	100	100	100

2-Piece Clamshell Fittings

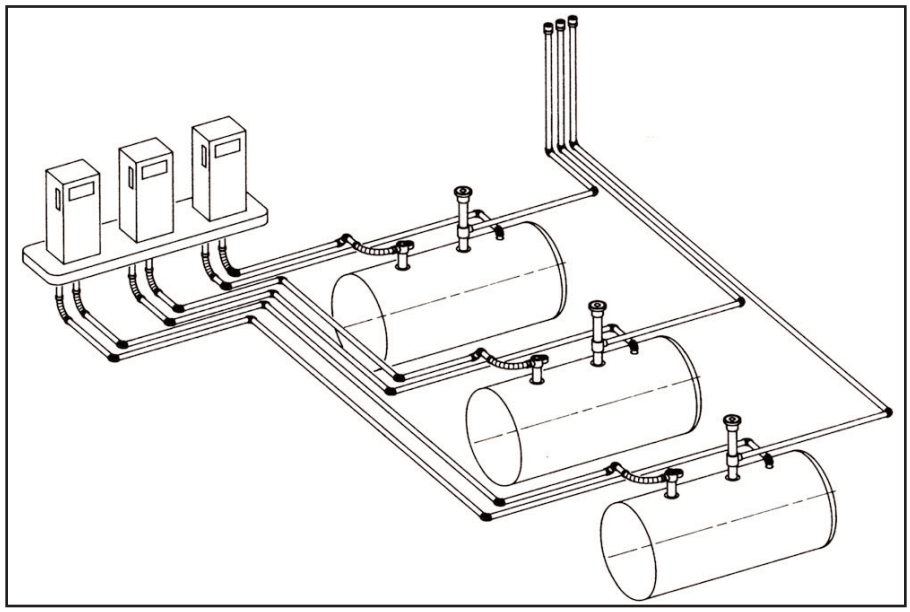
Pipe Size (inches)	Dualoy 3000/L Repair Coupling	Dualoy 3000/L Containment Fittings	Dualoy 3000/LCX Containment Fittings
2	200	–	50 **
3	125	50	20
4	100	50	20
6	100	50	–

** Pressure rating with stiffening rings.

1 Introduction

Dualoy 3000/L pipe and fittings are manufactured from chemically inert thermosetting epoxy resins reinforced with high tensile strength fiberglass filaments. The pipe is produced by filament winding. The pipe incorporates a resin-rich inner liner that is resilient and holiday-free and a resin-rich outer coating that protects the resin-glass bond of the structural wall from UV radiation during storage and installation. The structural wall strength of Dualoy 3000/L pipe is unsurpassed in the fiberglass pipe industry. Fittings are manufactured by filament-winding or compression molding: injection molding is not employed.

Dualoy 3000/L pipe and fittings are electrically nonconductive and never require cathodic protection or sacrificial anodes. Installed systems are immune to external corrosion from stray-current electrolysis and cathodic interference. They are unaffected by alkaline or acidic soil conditions.



2 Listings and approvals

Underwriters Laboratories Inc.®

Dualoy 3000/L is Listed in the United States with Underwriters Laboratories Inc. (UL) for nonmetallic underground piping for motor vehicle fuels (MV), concentrated fuels (CF), high blend fuels (HB) and aviation and marine fuels (AM). It is also Listed with Underwriters Laboratories Canada (ULC) for the same fuel categories. It can be used for primary carrier (PC), normal vent (NV) and vapor recovery (VR) under UL File No. MH 9172. It can be used for secondary containment (SC) under UL File No. MH 15596. The ULC File Number is CMH 715.

3 Inspection, handling and storage

Inspection

Upon receipt at the jobsite, inspect the pipe fully. Locate, cut out, repair or replace damaged pipe. Impact damage is usually recognizable as rounded pale areas just under the surface or as deep gouges, scratches or cracks. Remove end protectors to inspect tapers for damage and then replace protectors.

Handling

Fiberglass pipe is susceptible to damage if handled improperly. Adhere to the following recommendations when handling:

- Do not transport pipe without proper protection against impact.
- Truck pipe racks should be padded with carpeting, inner tubes, or the like to prevent damage.
- Tie the pipe down during transport to prevent it from bouncing on the racks and suffering impact damage.
- Do not use chains to tie down the pipe on a truck: Use nylon straps or hemp rope.

3 Inspection, handling and storage (cont.)

- Do not drop the pipe from truck bed when stringing: Lay the pipe down by hand
- Pipe loads that are properly separaed and supported can be unloaded by padded forklifts.

Storage

Dualoy 3000/L pipe incorporates a resin-rich reinforced outer coating which provides outstanding UV resistance. Pipe stored out os doors for extended periods may assume a chalky appearance. However, this change in appearance is superficial and does not affect the pipe's performance. Protect stored pipe from impact damage by stacking on padded racks.

4 Materials

Pipe

Manufacturer tallies pipe on the basis of overall length. Allow for cutting losses and wastage when ordering.

Fittings

Containment fittings (90° and 45° elbows, tees, couplings and reducer couplings) are shipped 5 sets to the box. Sump penetration fittings are shipped individually.

Adhesives

Ameron supplies **PSX•20** and **PSX•34** adhesives for use in Dualoy 3000/L secondary containment systems. **PSX•20** and **PSX•34** adhesives are polysiloxane-modified epoxy formulations. Both are designed to make permanent bonds in containment systems containing petroleum products, alcohols, alcohol-gasoline mixtures or oxygenated fuels. They are also approved for use with MTBE fluids.
Each is supplied as a two part system consisting of a resin and a hardener.

Each adhesive kit contains

- Resin
- Hardener
- Mixing stick
- Spatula and brush
- Detailed usage instructions
- Emery paper
- Gloves
- Paper towels

Refer to the layout drawings to estimate the number of adhesive kits required. Include bonds for all couplings, elbows, tees, reducers and sump penetrations plus a waste factor. Short pot life at higher temperatures may not allow as many bonds to be made as indicated in the tables: allow a greater waste factor at higher temperatures. For further information refer to the product data sheets for the individual adhesives.

Containment fitting bonds per 5-oz adhesive kit

Nominal Pipe Size (in)	(mm)	Ameron Adhesive	90° Elbows	45° Elbows	Tees	Concentric Reducers	Saddles	Couplings
3	80	PSX•20	3	3	2	4	3	3
4	100	PSX•20	3	3	2	4	2	2
6	150	PSX•20	1	1	1	1	1	1

Higher viscosity PSX•34 can be used more easily when ambient temperature is above 80˚.

When using pneumatic tools, the air supply must be dry and oil-free as moisture or oil on bonding surfaces will interfere with the adhesive.

Tools

The following tools are suggested to install Dualoy 3000/L piping:

- 3/8-inch electric drill or equivalent air-driven motor
- 4-inch hole saw for installing sump penetration fittings
- 1 1/2-inch diameter by 1-inch wide coarse-grit flapper sander
- Heavy-duty heat guns, hot air blowers, heating blankets or Chem Cure Paks for cool or cold-weather installation.

5 Trenching, bedding and backfilling

Recommended practices

Although fiberglass pipe has excellent strength, it must be protected against impact which may occur from improper handling or during backfilling.

- Provide a trench width equal to the pipe diameter plus six inches on each side. Separate multiple lines by at least 4 inches. Refer to Fig. 5-1.
- Provide a minimum of 18 inches of select backfill between the top of the pipe and unpaved ground surfaces.
- Provide a minimum of 4 inches of select backfill between the top of the pipe and reinforced concrete pavement (4 inches minimum thickness).
- Provide a minimum of 8 inches of select backfill between the top of the pipe and asphalt pavement (2 inches minimum thickness).
- Slope the trench bottom evenly from the dispensers back to sumps or tanks at a minimum ⅛ in/ft.
- Maintain the trench bottom free of hard or sharp objects.
- Grade the trench bottom with at least 6 inches of select backfill to provide firm, even support for the pipe. Compact the subgrade well to prevent differential settling.
- Protect the pipe from impact during backfilling and abrasion during operation by surrounding it with four to six inches of select backfill such as washed sand, pea gravel (¾-inch maximum) or crushed stone (½-inch maximum).
- Wrap pipe lying near concrete with rubber or foam padding to avoid direct contact with the concrete.

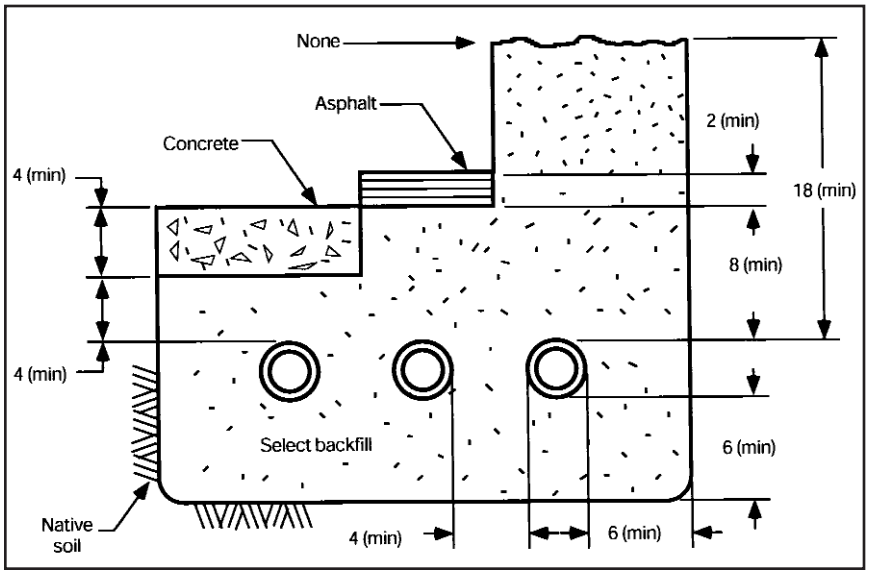


Fig. 5-1. Use only select materials for bedding and backfilling Dualoy 3000/L fuel handling systems. Native materials are rarely suitable and should not be used.

6 Dry fitting contained primary piping

Recommended practices

- Have island forms, boxes, and shear valves in place before dry fitting.
- Lay out and dry fit primary and containment piping at the same time.
- Allow sufficient clearance when dry fitting the primary to accommodate the containment fittings. Dimensions of containment fittings may be found at the end of this document.

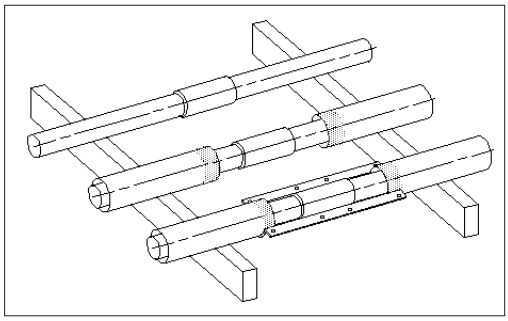


Fig. 6-1. During layout, bonding and inspection, support the piping on 2x4 blocks to keep the joints clean and to keep bedding out of the pipe. Remove supports before burial

Do not bond primary system together before the secondary containment system has been dry fit.

7 Dry fitting secondary containment systems

Cutting containment piping

Ameron containment piping employs a straight joint. Use of tapered pipe ends in straight containment fittings will result in a gap in the joint. When employing pipe that has been delivered with a factory taper as containment piping, remove the taper as shown in Fig. 7-1.

After cutting containment pipe to length, use a flapper sander, coarse sandpaper or emery cloth to remove the surface gloss for 1 to 1½ inches from the square-cut end of the pipe. Surface gloss is most conveniently removed before the containment pipe has been placed over the primary.

Place containment fittings under the dry-fit primary fittings when measuring the length of containment pipe to be cut. Cut the containment pipe to allow 1 to 1½ inches for insertion into each fitting as shown in Fig. 7-2.

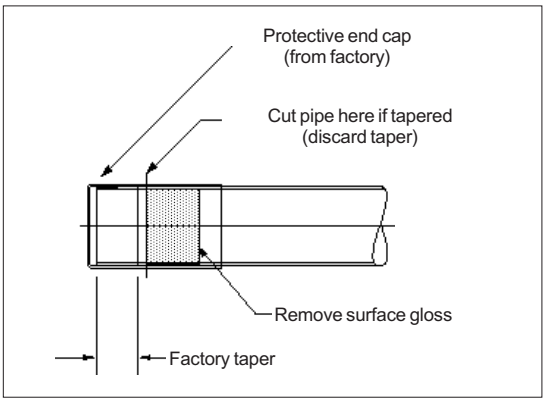


Fig. 7-1. Some containment pipe may be received with tapered ends. Cut off the tapers and remove the surface gloss for 1 to 1½ inches from the end of the pipe.

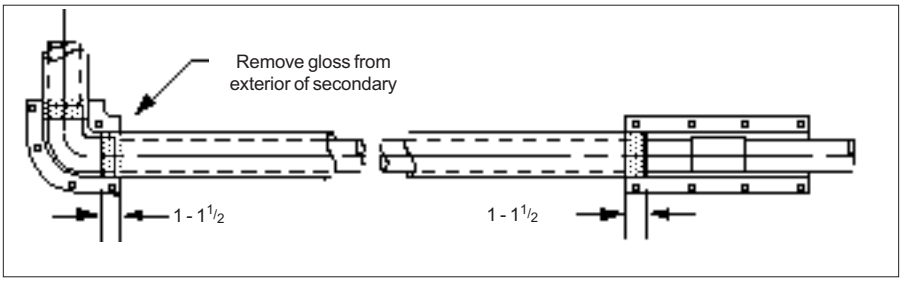


Fig. 7-2. Always include a coupling in the secondary wherever a primary coupling is located.

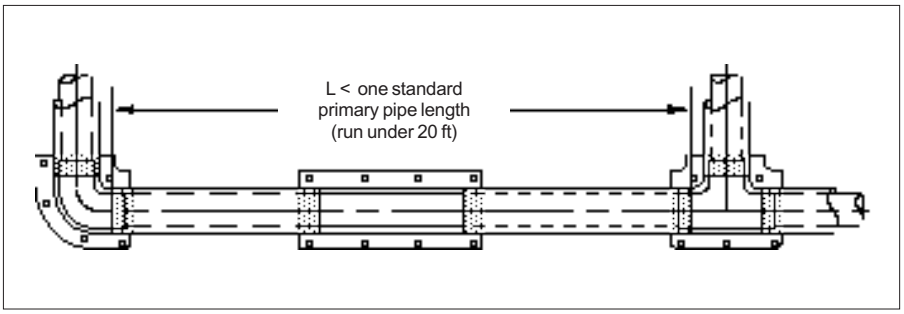


Fig. 7-3. In runs less than the standard 20-foot primary pipe length, include a containment coupling to provide access to the primary during bonding, testing and inspection. In short primary runs where lack of space prevents the use of a full-length containment coupling, use a half-coupling instead.

Cutting containment couplings

The center holes on 2-inch couplings have been located near the middle of the coupling. Cut exactly between these two holes. The resulting half-couplings will be 7 inches long. Two cuts are necessary when making 3 and 4-inch half-couplings.
The resulting half-couplings are 5½ inches long.

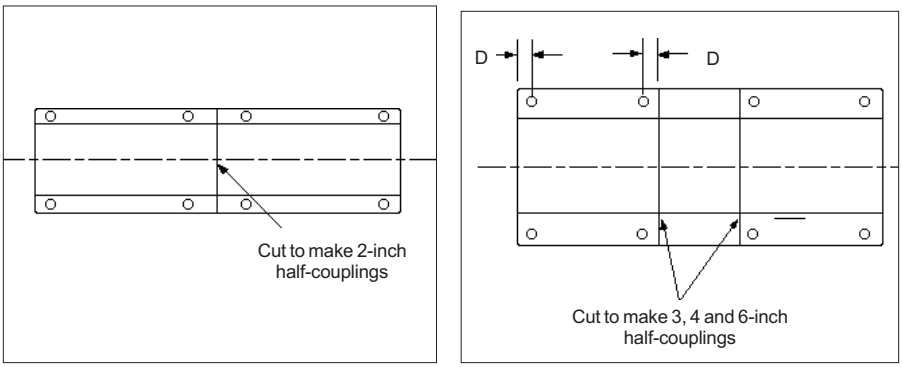


Fig.7-4. Cut full-length couplings so that all bolt holes on half-couplings are equidistant from the ends.

7 Dry fitting secondary containment systems (cont.)

Containing crossovers and very short runs

Make crossovers by using 45° elbows and tees in both primary and containment. In this way a minimum 4-inch vertical clearance can be provided between the lines. Limit the length of containment nipples at crossovers and other very short runs to the face-to-face distance between the secondary fittings plus 1½ inches in order to allow sufficient space to move the containment nipple while working on the primary. This length will provide an insertion depth of ¾ inch of pipe in the containment fittings.

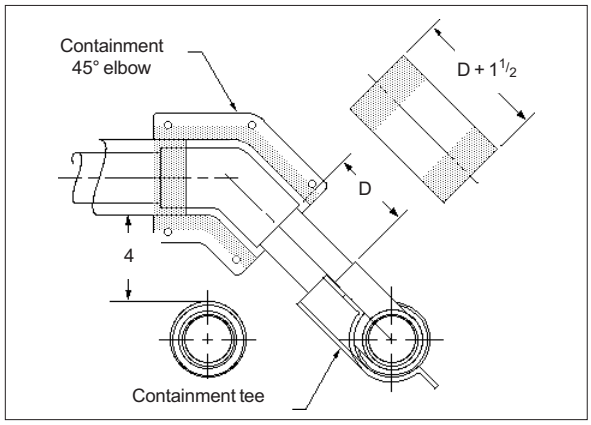


Fig. 7-5. At crossovers and very short runs where even a containment half-coupling cannot be included, cut the containment pipe so that a minimum ¾-inch insertion depth in the containment fittings is maintained.

Centralizers

Centralizers are not required in Dualoy 3000/L containment systems

Take care not to allow stones and backfill to enter the annular space between primary and containment as this may result in leaks.

Vent piping

Do not use fiberglass pipe to support the weight of heavy items in a line such as valves, strainers and steel riser pipes. When containing vent piping, do not use fiberglass vent or containment piping to support the steel riser pipes: the weight of the steel risers may prevent good bonds in the fiberglass lines and result in leaks. Support the risers by attaching them directly to structure walls.

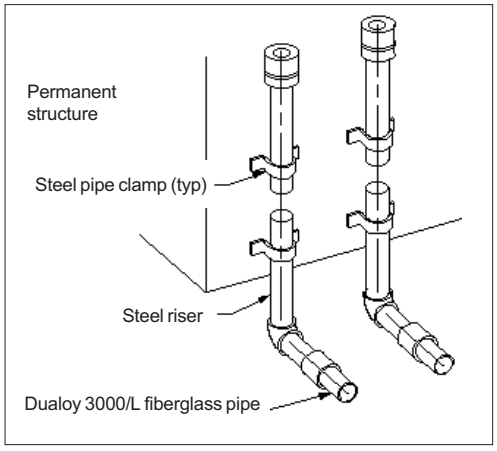


Fig. 7-6. Support risers by attaching them directly to structure walls.

8 Bonding containment piping

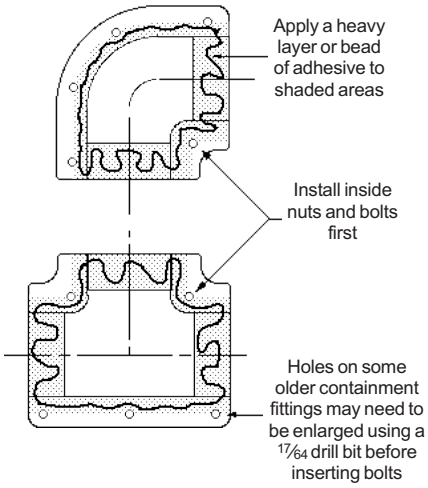


Fig. 8-1. Containment fittings seal effectively only if the shaded areas between the holes in the flanges and the inside are well covered with adhesive. Adhesive applied to the outer half of containment fitting flanges will serve no purpose unless the holes themselves are sealed. For this reason, and to conserve adhesive, it suffices to apply adhesive only to the inner half of the flanges.

The sole purpose of bolts is to hold containment fitting halves together while the adhesive cures.
The performance of joined and cured Ameron fiberglass pipe systems depends in no way on bolts or any other metallic closure devices.

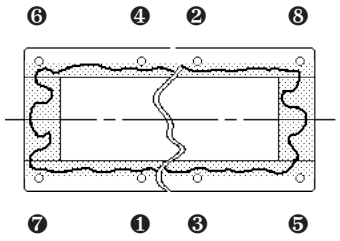


Fig. 8-2. When installing containment couplings, always alternate from side to side as indicated above to assure uniform tension on both sides of the fitting.

Do not move or step on the containment piping before the adhesive is cured as this may disturb the joints enough to cause leaks.

Adhesives for containment piping

Two different amine-cured epoxy-resin adhesives are used to install Ameron containment piping. Ameron PSX•20 or PSX•34 adhesive is used for 3, 4 and 6-inch containment pipe and fittings.

Bonding and testing contained primary piping

- Bond the primary only after the containment pipe has been placed over it and all adjustments have been made for clearance and interference.
- Follow standard adhesive procedures. Do not disturb the primary lines before the adhesive cures.
- Primary system bonds must be visually inspected or soap tested before installing containment fittings.

Sealing containment piping

- Bond containment only after primary lines have been tested and inspected.
- All bonding surfaces must be free from water, soap, oil, grease, dirt and the like and should be lightly sanded before applying adhesive.
- Take care that each leg of the containment pipe goes into the fitting straight and is not disturbed until the adhesive has cured.

Assembly of 3, 4 and 6-inch containment fittings

- Apply a **uniform, heavy coating or heavy bead** of adhesive to the **inner half** of containment fittings flanges (Fig. 8-1), to the sanded radius of the fitting where the pipe will fit, and to the outside of the containment pipe. **Apply adhesive to both half-shells.**
- Carefully put the containment fitting, with pre-inserted propellor nuts, around the containment pipe. Make sure the pipe is not cocked or misaligned in the fitting.
- Containment fittings are then joined with bolts. Insert and begin threading each bolt into the pre-inserted nut by hand. A nut driver or powered device can be used to assemble the bolts. If a power tool is used to tighten the bolt, confirm tightness of each bolt with a nut driver.

PSX•20 & PSX•34 Pot Life and Cure Times (5-oz)

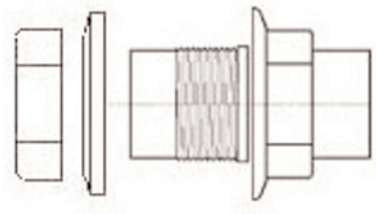
Ambient Temperature[1]		Pot Life		Minimum Cure Time[1,2]	
		PSX•20	PSX•34	PSX•20	PSX•34
(°F)	(°C)	(minutes)	(minutes)	(hours)	(hours)
50	10	70	70	12	12
65	18	40	35	6	7
75	24	25	25	4	5
95	35	10	10	3	3

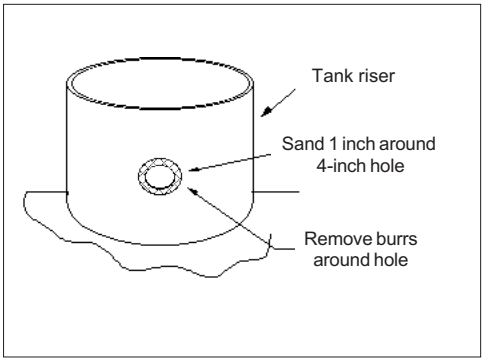
1) An external heat source must be used to cure PSX•20 adhesive at temperatures below 40°F (5°C) and PSX•34 adhesive at temperatures below 60°F (16°C). The adhesive and the bonding surfaces should be warmed to 50°F (10°C) before mixing and applying the adhesive. Adhesive may be cured using an Ameron Chem Cure Pak© (US Pat. No. 3,475,239) or an Ameron-approved electric heating blanket.
2) The minimum joint cure time must elapse prior to pressure testing.

- Always make up bolts by alternating from one side to the other as shown in Fig. 8-2 to assure uniform tension on both sides of the fitting. Similarly, always make up the inside bolts on tees and elbows before closing those on the outside; make up the large end of concentric reducers before the small end.
- When bolts are tight, a bead of adhesive should squeeze out all around the bond line. Wipe off excess with the curved corner of the spatula or a gloved finger. This also helps remove any surface bubbles that may have occurred.

9 Sump penetrations

The Dualoy sump penetration fitting (Fig. 9-1) provides a simple means of penetrating multi-sided fiberglass tank risers or sumps in contained piping systems. The fitting is typically mounted through a sump wall. Ported reducing closures (Fig. 9-3) may be used inside the sump to isolate the annular space between the primary and the containment pipe and to provide a monitoring port. Alternatively, the sump fitting is available with a factory-installed monitoring port (Fig. 9-6).





Figs. 9-1,2. The Dualoy sump fitting (left) provides a simple means of penetrating fiberglass tank risers (right) or sumps in contained piping systems.

Before installing the primary

- Use a hole saw to cut a 4-inch hole in the sump wall as low as possible to provide maximum slope into the sump.
- Remove any burrs from the edge of the hole.
- Check hole size by dry fitting the fitting from the inside.
- Using a disc grinder, abrade about 1 inch around the hole to provide a rough bonding surface .
- Mix Ameron PSX•20 adhesive following the instructions included in the kit. Apply an even layer of adhesive to
  - The edge of the hole and around the hole, on both the inner and outer wall.
  - The bonding surface of the fitting flange and flange ring.
- Install the fitting in the proper orientation.
- Make up the nut from the outside and check around the edge of the flange on the inside and the flange ring on the outside to verify the presence of an adhesive bead. If a bead is not visible all the way around, remove and restart applying more adhesive. Tighten with a wrench or by hand.
- Do not move the fitting until the adhesive has cured. Follow the cure time recommendations on the adhesive instruction sheet.

After installing the primary

Most specifications will call for isolating the annular containment space from the sump. This may be accomplished using 3 x 2 inch containment closure pieces as shown in Fig. 9-3 or by using a sump fitting that has been provided at the factory with a bushing in the annulus between the sump fitting itself and a primary pipe sleeve coupling as shown in Fig. 9-5.

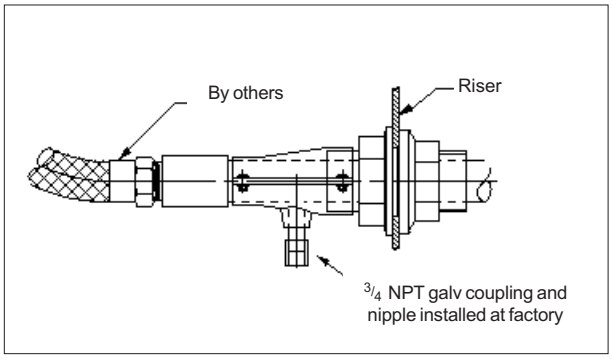


Fig. 9-3. A ported reducing closure isolates the annular space between the primary and the containment pipe and provides a monitoring port inside the sump.

When using 3 x 2-inch reducing closures to isolate the annular

9 Sump penetrations (cont.)

space between the primary and the secondary, provide sufficient length of primary pipe to accommodate both the closure pieces and the fiberglass bell x female threaded adapter which terminates the primary.

To install 3 x 2 reducing closures, sand the sump fitting, the exterior of the primary pipe for about 1½ inches where the small end of the closure pieces will fit (Fig. 9-4), and the bonding surfaces of the closure pieces (Fig. 7-6). Apply liberal amounts of adhesive to the sanded areas and bolt the closure halves together.

The containment system annular space can also be sealed off and isolated from the sump by means of special sump penetration fittings that permit direct connection of 1½ or 2-inch flex connectors to the penetration fittings themselves on the inside of the sump. This configuration provides more space in the sump. These fittings also incorporate tapered female bell ends on the other end, thus permitting direct bonding of 2-inch primary pipe to the penetration fittings on the outside of the sump.

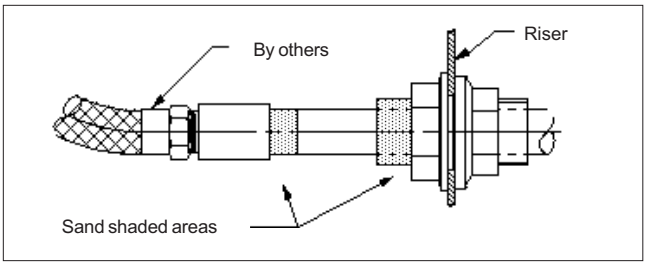


Fig. 9-4. Sand the bonding surfaces of the sump penetration fitting, the primary pipe, and the reducing closure pieces before applying PSX•20 adhesive.

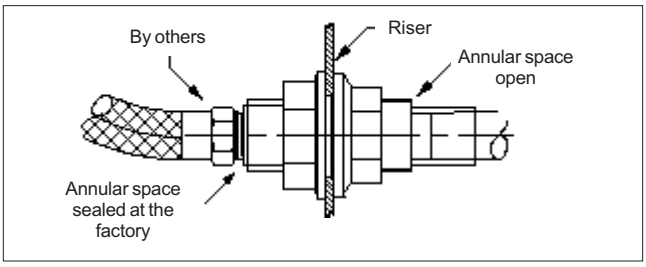


Fig. 9-5. Sump penetration fittings are available from the factory with 1½ - and 2-inch NPT female threads on the inside and 2-inch female tapered bell ends on the outside that permit direct connection of flex connectors and product lines.

On the outside of the sump, join the containment pipe to the penetration fitting with the following:

1) Full-length 3-inch containment couplings; or

2) Half-length 3-inch containment couplings as shown in Fig. 9-7.

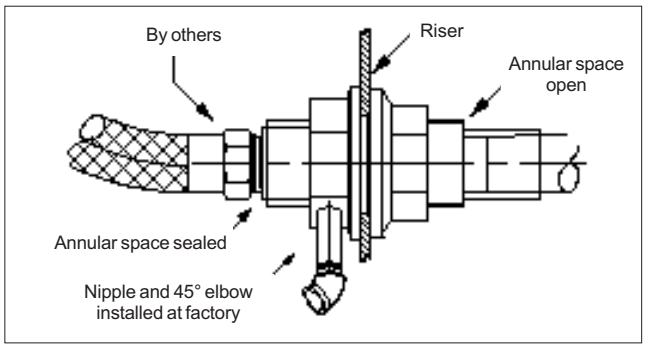


Fig. 9-6. The sump penetration fittings shown in Fig. 10-5 are also available with factory-installed monitoring ports that can be used in place of the ported reducing closure shown in Fig. 9-3.

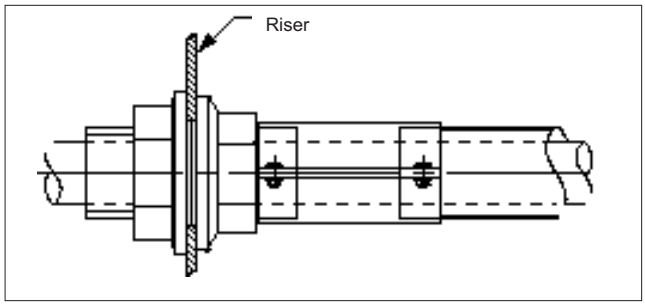


Fig. 9-7. Join containment piping to sump penetration fittings by means of containment couplings

10 Containment system testing

Pneumatic testing

Plan tests carefully and carry them out with all due precaution.

Pressurizing equipment should be suited to the size of the system and the pressure required and should be operated by qualified and experienced personnel only. Pressure sources should be capable of approaching test pressure gradually.

Use gauges with a full-scale reading of no more than twice the test pressure: Do not use a 100 psi gauge for a 10 psi test. Use reliable gauges calibrated against a dead weight tester and zeroed for atmospheric pressure.

Pneumatic testing at approximately 10 psi is recommended and is the preferred method of testing containment piping. Higher pressures are dangerous as a sudden release could cause the piping to whip out of the trench. A 10-psi test will attest to the integrity of the system. If higher test pressures are mandated, please consult Ameron Fiberglass Pipe Systems.

11 Repair procedures

Repairing non-contained primary piping

Refer to Ameron Bulletin 7501 for detailed instructions concerning the repair of primary piping in non-contained systems

Repairing contained primary piping

The 2-inch Dualoy repair coupling is sized so that it can be contained with 4-inch Dualoy 3000/L pipe.Thus, when repairing primary pipe contained within 3-inch standard containment pipe, replace the containment pipe with a 4-inch containment nipple. Join the 4-inch replacement nipple to the existing containment pipe with 4x3 reducing couplings.

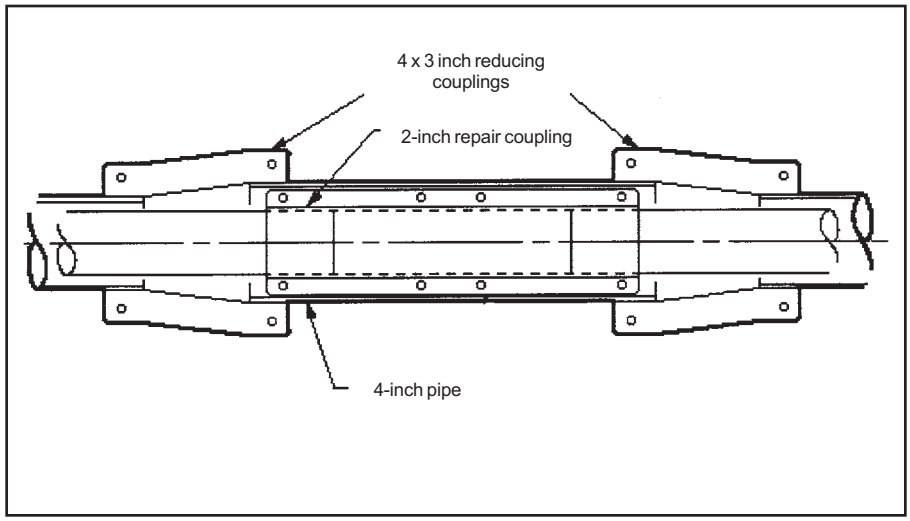
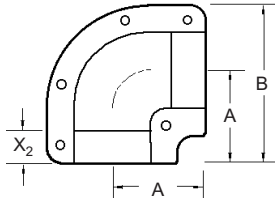


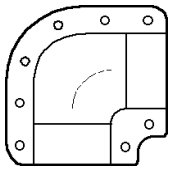
Fig. 11-1. Refer to Bulletin 7501 for detailed procedures which must be followed for repaired primary piping to maintain its UL listing.

When repairing lines that have been in service and that may contain flammable fumes, do not use electric drills or other tools which may constitute a spark hazard near the pipe. Use only air-driven or manual tools for cutting and sanding.

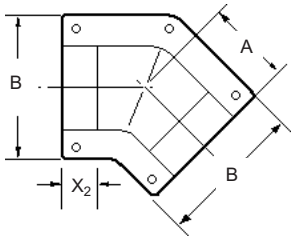
13 Containment fittings dimensions

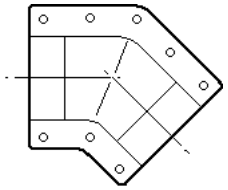
	Nominal Pipe Size		A	B	C	X_2	No. of Bolt Holes	Wt.
	(in)	(mm)	(in)	(in)	(in)	(in)		(lb)
90° elbows	3	80	4.28	7.28	-	1.50	5	1.1
	4	100	4.77	8.25	-	1.50	5	1.3
	6	150	5.62	10.53	-	2.00	8	1.5



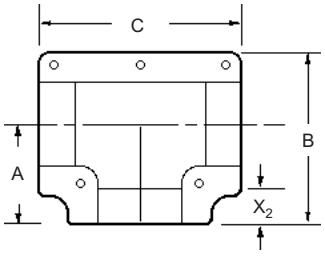

6-inch elbow

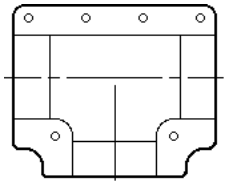
45° elbows	3	80	3.50	6.00	-	1.50	5	0.8
	4	100	3.75	7.00	-	1.50	5	1.2
	6	150	6.32	9.75	-	2.00	8	1.5



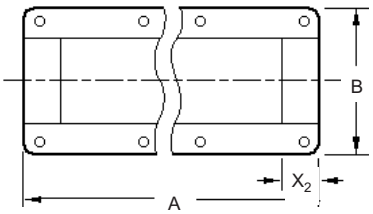

6-inch elbow

Tees	3	80	4.28	7.24	8.56	1.50	5	1.2
	4	100	4.78	8.25	9.58	1.50	5	1.6
	6	150	5.72	10.67	11.65	2.00	6	1.7

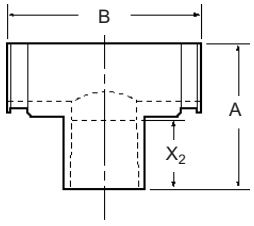



6-inch tee

Couplings	2	50	14.00	4.00	-	1.50	8	1.3
	3	80	14.00	6.00	-	1.50	8	1.7
	4	100	14.00	7.00	-	1.50	8	2.0
	6	150	14.19	9.75	-	4.00	10	2.0



Saddles	3 x 2	80 x 50	4.00	6.00	-	2.15	-	1.3
	4 x 2	100 x 50	4.50	6.00	-	2.15	-	1.7
	6 x 2	150 x 50	5.56	7.75	-	2.15	-	2.1

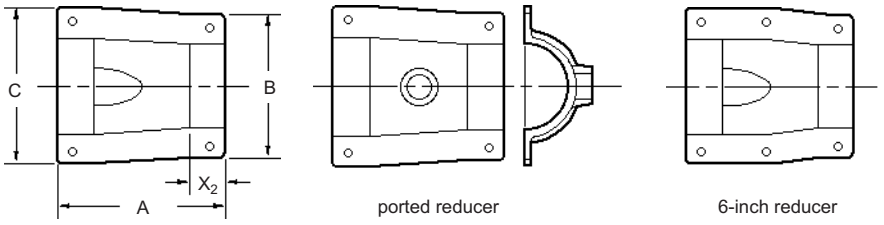


13 Containment fittings dimensions

Reducers, plain and with 3/4-inch NPT outlet

Nominal Pipe Size (in)	Nominal Pipe Size (mm)	A (in)	B (in)	C (in)	X_2 (in)	No. of Bolt Holes	Wt. (lb)
3 x 1½	80 x 40	6.25	4.48	6.10	1.50	4	0.6
3 x 1½	80 x 40	6.25	4.47	6.10	1.50	4	1.1[1]
3 x 2	80 x 50	6.25	4.90	6.10	1.00	4	0.7
3 x 2	80 x 50	6.25	4.90	6.10	1.00	4	1.1[1]
4 x 3	100 x 80	7.00	6.00	7.00	1.50	4	0.9
4 x 3	100 x 80	7.00	6.00	7.00	1.50	4	2.0[1]
4 x 3½	100 x 90	6.25	6.36	6.98	1.50	4	1.0
6 x 4	150 x 100	7.17	7.62	9.74	2.00	6	1.0

1) Ported reducer.

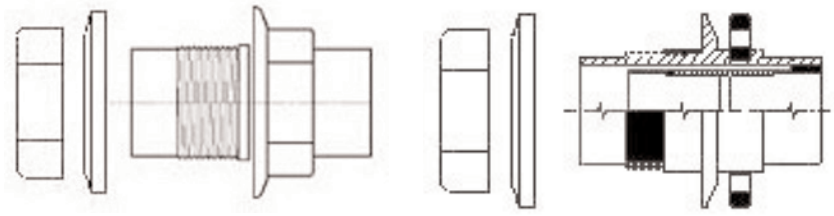


ported reducer

6-inch reducer

Sump penetration fittings

Plain sump penetration fittings are stock items. Sump penetration fittings with factory-installed centralizers, sleeve couplings and monitoring ports must be special ordered.



14 Health and safety information

FOR CHEMICAL EMERGENCY

SPILL, LEAK, FIRE,
EXPOSURE OR ACCIDENT

CALL CHEMTREC
DAY OR NIGHT

1-800-424-9300

Toll-free in the
continental U.S.

483-7616 in
District of Columbia

For calls originating outside the
continental U.S.

202-483-7616
Washington D.C. collect

ALL CALLS ARE RECORDED

Toxicity of adhesives

Hardeners: Irritating to the skin, eyes and respiratory tract: orally toxic; may cause sensitization.

Resins: May be mildly irritating to skin and eyes; may cause sensitization.

Handling precautions for adhesives

Hardeners: Do not get in eyes, on skin or clothing. Avoid breathing vapor. Wash thoroughly after handling. When handling in the field, wear gloves and eye protection. When handling in bulk quantities, wear rubber gloves, rubber apron and NIOSH-approved respirator.

Resins: Avoid contact with eyes, skin or clothing. When handling in the field, wear gloves and eye protection. Wash thoroughly after handling.

First aid for adhesive users

In case of contact

Eyes: Immediately flush with plenty of water for at least 15 minutes. Call a physician.

Skin: Wash with water, and soap if available.

Clothing: Remove contaminated clothing and wash before reuse.

Inhalation: Remove to fresh air. Give oxygen or artificial respiration if necessary.

Ingestion: If hardener is swallowed and patient is conscious, give plenty of water or milk to drink. Do not induce vomiting. Call a physician. If resin is swallowed, give 100 grams (about ¼ lb) activated charcoal slurry in water. Do not induce vomiting. Call a physician.

Important notice

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Fax: (940) 325-9681