

Notice: Fabrication of Durcor pipe is restricted to personnel that have been factory or distributor trained

Safety Precautions

Always wear chemical splash goggles for eye protection. If eye contact should occur, flush with water immediately and contact your physician.

Always wear impermeable gloves to avoid skin contact. If skin contact should occur, wash immediately with soap and water.

Warning: The chemical reaction that takes place when the adhesive and catalyst are mixed together will generate high temperatures. Protective gloves must be worn to handle can during use. The unused mixed adhesive may smoke slightly and bubble after pot life expires. DO NOT discard until can has cooled.

Read and follow instructions. If you have any questions please contact your local Durcor distributor or contact PureFlex, Inc. at 616.554-1100.

Contents of Durcor adhesive kit:

- Durcor adhesive DBP-VE part "A"
- Durcor Catalyst part "B"
- Wooden stir and application sticks
- Instructions

In addition to the above the following will be required:

- Clean, lint-free, dry cloths
- Impermeable gloves
- Splash goggles
- Emery cloth with a 30 - 60 grit for sanding pipe, drum or disc sander with 36 - 60 grit may also be used for larger projects
- Heat gun or heat blanket may be required

Bonding Environment

Durcor pipe needs to be fabricated at temperatures of 70°F to 100°F. Durcor adhesive kits should be at 70°F to 80°F just prior to fabrication. In cold weather environments, Durcor adhesive kits should be placed in a warm room for 6 - 12 hours so they can reach temperatures of 70°F - 80°F prior to use. Pipe ends and fittings should also be warmed. Apply a heat blanket to the joint in cold weather and leave on according to chart (2) curing on reverse side.

Durcor adhesive kits should never be heated in excess of 100°F. In hot weather avoid direct sun light as this could elevate adhesive temperatures. Cool unopened adhesive kits to 70°F - 80°F.

Fabrication should be done in an inside area when possible.

Pipe Testing

Durcor pipe should be hydrostatically tested prior to being put into service. Avoid water hammer during testing to avoid pipe system damage. All anchors, guides, and supports must be installed prior to testing.

WARNING:

DURCOR PIPE AND FITTINGS ARE NOT DESIGNED FOR USE WITHOUT PTFE LINER INSTALLED.

Fabrication Steps For Durcor Pipe

Step 1

Remove PTFE liner. Note: The PTFE liner and composite pipe are a matched pair and the same liner must be reinstalled into the same Durcor composite pipe.

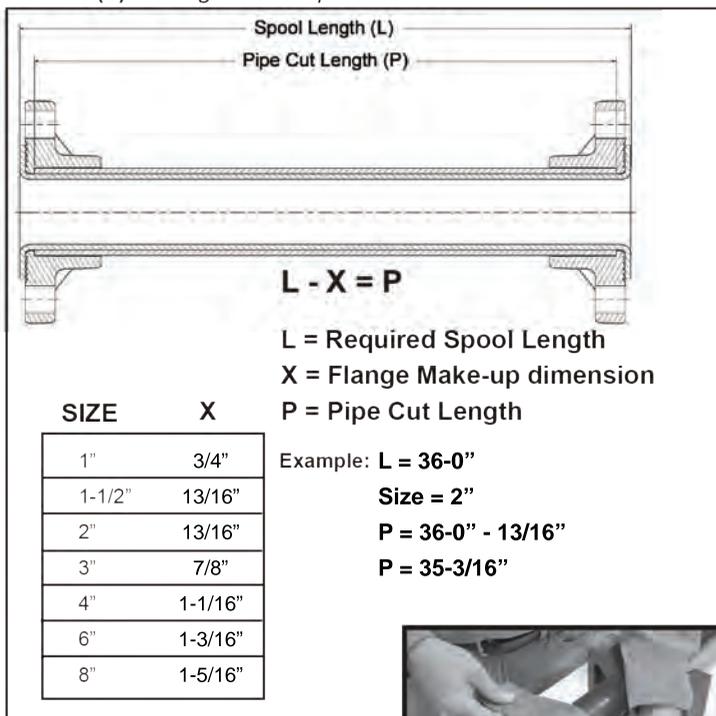


Step 2

Determine required length and cut pipe using chart (1) flange make-up calculation. Use hacksaw or power saw with aluminum oxide blade. Cut must be smooth and square for proper fit. Note: Make sure PTFE is removed prior to any cutting.



Chart (1) Flange Make-up Calculation



Step 3

Prepare pipe ends and flanges for joining. Sand both pipe ends with 36 to 60 grit emery cloth removing all gloss at least 1/2" beyond flange socket. Prepare flange socket by sanding the inside diameter the same as pipe. Note: never sand more than 1 hour before making a joint due to airborne contaminants that may foul sanded ends.

Never use solvents or touch sanded end as this will prevent a proper bond. Once pipe and flange are sanded, wipe sanded area with clean, dry, lint-free cloth.



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Step 4

Durcor adhesive mixing directions. Mix Part "A" to fully disperse any liquid that may have separated during storage. Add entire part "B" catalyst (curing agent) into Part "A" can. Immediately mix with mixing stick supplied for a minimum of two minutes until the color is consistently a dark gray or black. There should be NO streaks around edges or at the bottom of can.



Step 5

Apply mixed adhesive to pipe. Firmly apply a layer of mixed adhesive to the pipe approximately 1/8" thick.



Step 6

Repeat this procedure with the flange, applying a thin layer approximately 1/16" thick.

Note: too much adhesive applied to flange socket will cause adhesive obstruction in pipe. If that occurs, use application stick to remove any excess buildup.



Step 7

Push the flange onto the pipe until it is fully engaged. Use a square or level to make sure flange is positioned properly. If using fixed flanges, align bolt holes with opposing flange (two hole) prior to installing to minimizing rotation after flange is installed. Keep flange rotation limited to 1/2" or less while pushing. Too much flange rotation during install will cause weak joint.



Step 8

Create a 45° fillet of adhesive on backside of flange using application stick. Make sure flange is held level until adhesive is cured.



Step 9

Drill 1/8" safety vent hole on each end of pipe spool about 3" away from adhesive fillet. If pipe spool is 6" or less in length, only (1) safety vent hole is required.



Number of Bonds Per kit of Durcor Adhesive

Size	Bonds
1"	12
1-1/2"	10
2"	8
3"	5
4"	3
6"	2
8"	1

Chart (2)

Joint Curing

The fabricated joint will completely cure in 24 hours at 70°F. Cure time can be decreased and joint strength increased by heating the joint to 225°F with a heat blanket or heat gun. Use a heat gun to harden the fabricated joint until it is tack-free. Then apply a heat blanket at the cure time listed in chart below.

Before moving pipe spool or reinstalling PTFE liner for fabrication, the adhesive must be hardened and tack-free. DO NOT install pipe spool into service until completely cured as listed on chart below.

Pot life and cure times of Durcor adhesive

Adhesive Temp °F	Pot Life (Min.)	Gel Time (Min.)	Cure Time (Hours)
70 - 80	25 - 30	30 - 40	24
81 - 90	15 - 25	20 - 30	24
91 - 100	10 - 15	15 - 20	24
			Cure Time - Minutes
Heat Assisted			1 - 6" 60
			8" 90

Pot Life (working time) of Durcor adhesive may vary with temperatures and humidity.

Adhesive disposal

Once the adhesive part "A" and catalyst part "B" have been mixed and fully reacted and hardened, it is classified as non-hazardous material and can be disposed of in a normal manner. Extra adhesive and hardener should be mixed and allowed to harden and disposed of as described above.

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Warning: Not following procedures described herein will produce products not suitable for installation. These instructions are restricted to personnel that have been factory or distributor trained. Poor fabrication can lead to premature pipe failure and personnel injury and/or equipment damage.

Read and follow instructions. If you have any questions please contact your local Durcor distributor or contact PureFlex, Inc. at 616.554-1100

Use adequate ventilation when flaring PTFE indoors. Avoid breathing PTFE vapors. Do not consume food and do not smoke during fabrication. Wash hands immediately after completing fabrication.

Contents of Durcor PTFE flaring kit:

Kit sizes available 1" to 8"

- PTFE drive plugs
- Steel cut-off ring for cutting PTFE
- Flaring dies
- PTFE liner expander
- T-Wrench
- Tube of thread anti-seize
- High temperature thermometer
- Pin punch
- High temperature gloves
- Propane Stove (optional)
- Instructions

In addition to the above the following will be required:

- Clean, dry cloths
- Safety goggles
- Emery cloth with a 30 - 60 grit for sanding pipe / file

Fabrication should be done in an inside area when possible.

Pipe Testing

Durcor pipe should be hydrostatically tested prior to being put into service. Avoid water hammer during testing to avoid pipe system damage. All anchors, guides, and supports must be installed prior to testing.

Shelf Life

Temperature		Part A Shelf Life	Part "B" Shelf Life
°F	°C	months	months
40-50	4-10	6	12
51-60	10-16	5	12
61-70	16-21	5	12
71-80	21-27	3	12
81-90	27-32	3	9
91-100	32-38	1-2	4

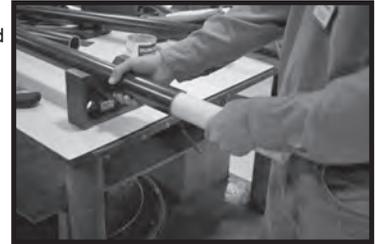
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Fabrication Steps For Flaring PTFE Liner

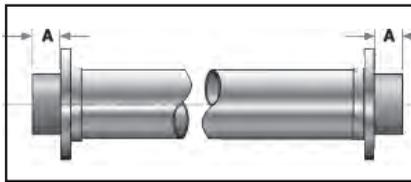
Step 1

Reinstall PTFE liner. Note: The PTFE liner and composite pipe are a matched pair and the same liner must be reinstalled into the same Durcor composite pipe.



Step 2

Determine length of PTFE required to be projected out of composite pipe for both ends. See chart dimension "A".

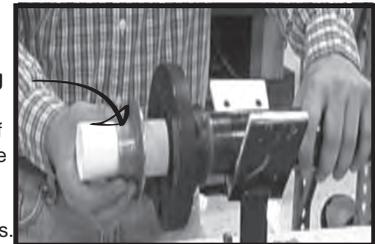


Size	A
1"	1"
1-1/2"	1-1/8"
2"	1-3/8"
3"	1-1/2"
4"	1-3/4"
6"	1-3/4"
8"	1-7/8"

Step 3

Using a sharp hacksaw with supplied cutoff ring to cut off excess PTFE liner. Make sure cut is square, clean and even. Failure to ensure a clean square cut will cause the PTFE liner to split during the flaring process.

Cut-off Ring



Square cut with hacksaw



Clean end with emery cloth or trim any loose edges



Step 4

Insert Expander assembly into PTFE. The Expander assembly locks the PTFE liner against the composite pipe wall preventing it from sliding during flaring.



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Step 5

Line up groove on T-Wrench so it is even with end of PTFE liner. Tighten the expander nut until the expander is locked tightly in PTFE liner. Make sure expander is centered in liner or uneven flare could result.



Step 11

Disassemble by removing drive nut and washer and flaring die.



Step 6

Use propane burner to heat flaring die to 740°F. Reduce flame at 680° as flaring die temperature will continue to rise after flame is off.

Heating the flaring die can take place while previous steps are being performed.



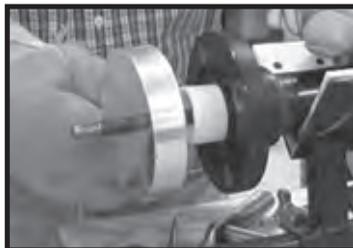
Step 12

Loosen expander nut and carefully remove expander without scratching PTFE flare face.



Step 7

With high temperature gloves on, remove flaring die from burner and place on expander rod, sliding it forward just before contact with PTFE liner.



Completed Flare

Flare should have a minimum outside diameter as listed in chart below.

Size	Flare Diameter
1"	1-7/8"
1-1/2"	2-11/16"
2"	3-7/16"
3"	4-5/8"
4"	5-15/16"
6"	8"
8"	10-1/16"



Step 8

Install washer and drive nut and slowly start turning T-Wrench in clockwise rotation. The tightening of the nut will begin the flaring process.



IMPORTANT:

If completed pipe spool is not going to be installed immediately, install a protective wood cover to protect PTFE flare.

Step 9

Continue to smoothly turn drive nut as uniformed flare starts to develop as pictured. Keep advancing the flaring die steadily, without stopping, until flaring bottoms at flange. Sudden increase in resistance will indicate the bottom. Then turn 1/4 turn more.



Step 10

Once flared, quench the assembly in cool water until temperature reaches under 100°F or warm to the touch.



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