Secondary Containment Pipe and Two-Piece Fittings

(Red Thread™, Green Thread™, Z-Core™, Centricast Plus™ RB-2530 or CL-2030 and Centricast™ RB-1520 or CL-1520)

CHEMICAL & INDUSTRIAL

Product

NOV Fiber Glass Systems offers secondary containment piping systems with two-piece fittings that meet EPA requirements and help protect the environment by containing possible fluid leaks in case of damage to the system. Both vinyl ester and epoxy resin systems are available to match your application.

Secondary containment piping systems are available in 3”-16” sizes. The primary and secondary containment piping is manufactured by either filament winding or the centrifugal casting process. Refer to Brochure CI1000 for more details.

The secondary containment system is designed for use with Red Thread, Green Thread, Z-CORE™, Centricast Plus RB-2530 or CL-2030, and Centricast RB-1520 or CL-1520 primary (product) pipe. Primary piping can be centered in the containment piping by using centralizers and anchors as needed.

The secondary containment piping system consists of the next larger pipe size (as a minimum) and special two-piece fittings. The size of the containment pipe may be dictated by the leak detection method used. Standard fittings are manufactured with epoxy vinyl ester resin. Fittings are manufactured by either the compression molding process, or the contact molding process.

The specific primary, or product, piping should be selected to meet your particular temperature, chemical, and pressure requirements. Depending on size and type of product, the pipe can withstand pressures to 450 psig and temperatures to 275˚ F. Refer to Brochure CI1000 and associated Product Data bulletins for your primary pipe selection. The containment systems can be pressure tested and continuously monitored.

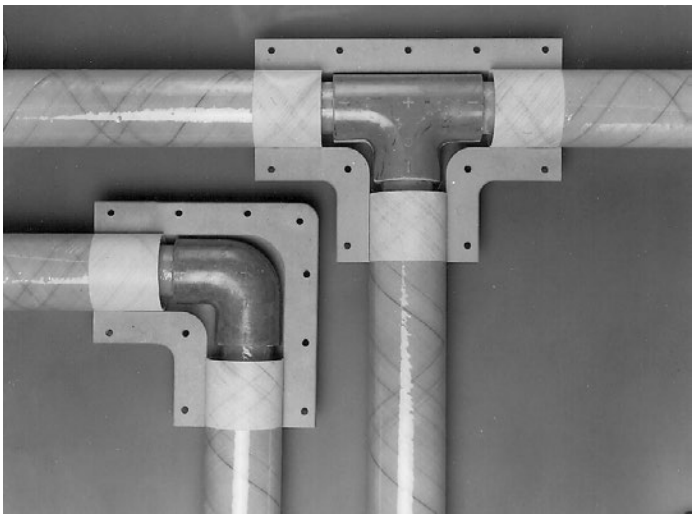
Refer to Matched Taper Joint, Socket Joint, and Clam Shell Installation Manuals..

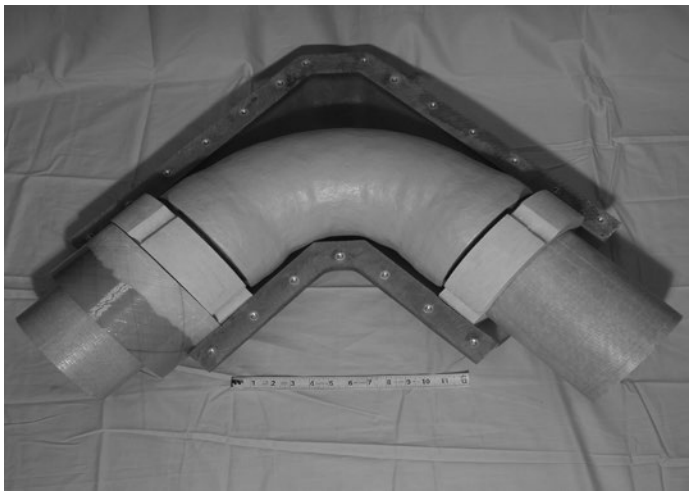
Years of experience have proven that fiberglass pipe from NOV Fiber Glass Systems will outlast pipe made of traditional materials. The service life of fiberglass pipe is far greater than that of pipe made from protected steel, copper, black iron, and even stainless steel.

The advantages of lightweight fiberglass piping are even greater when installing secondary containment systems. Very little equipment is required, and the ease of installation results in material handling and installation cost savings.

Fittings

A complete range of primary fittings is manufactured with the same temperature and pressure capabilities as the pipe. For containment systems, easy to use two-piece fittings constructed of epoxy vinyl ester resin and fiberglass are available.





Standard Secondary Containment Piping Systems

Primary Pipe Size	Minimum Containment Pipe Size for Red Thread & Green Thread Primary Pipe	Minimum Containment Pipe Size for Centricast RB & CL and Z-Core Primary Pipe
in	mm	in
1	--	3
1½	--	3
2	3[1]	3[1]
3	4[1]	4[1]
4	6[1]	6[1]
6	8	8
8	10	10[2]
10	12	12
12	14	14
14	16	16

[1] When using 2", 3", or 4" sweep fittings, use containment pipe and fittings that are two diameter sizes larger than the primary. Contact the factory for recommendations.

[2] When using 8" 90° elbows, 12" containment 90° elbows may be needed. Contact factory for recommendations.

NOTE: When using 3" 90° elbows, 6" containment 90° elbow may be needed. Contact the factory for recommendations.

NOTE: Primary couplings must be installed inside of secondary containment coupling fittings.

Installation

Refer to installation manuals for instructions.

NOTE: It is highly recommended that assembly training be conducted by a factory representative prior to installation start up.

When connecting containment pipe and fittings, plain ends of the containment pipe are machined or thoroughly sanded to accept the two-piece containment fitting. Containment pipe must be positioned over the primary piping before assembly and bonding of the primary pipe system. The size of the containment fittings may dictate the minimum center line dimensions for the primary piping.

Upon completion of a successful primary pipe test procedure, the two-piece secondary containment fittings may be installed. They are installed using threaded inserts embedded in the fittings and the hex-head bolts supplied by NOV Fiber Glass Systems. A system-matching adhesive must be applied to all bonding surfaces just prior to being joined by the bolts. The secondary containment system must be given time for the adhesive to properly cure before testing the annular space.

The testing of secondary containment piping systems is recommended to ensure the integrity of the pipe, fittings and joints of all types. The introduction of the test fluid during testing should be controlled to prevent sudden pressure surges (Water Hammer). Water Hammer can produce pressures that greatly exceed recommended system test pressure.

WARNING: These procedures must be followed to avoid serious personal injury or property damage. Failure to do so will result in loss of warranty. Buyer, installer or any employee, agent or representative thereof assumes the risk of any damage or injury to person or property.

Testing with air or gas can be extremely dangerous. Review safety precautions before starting the test and follow all testing procedures.

Air Testing

Hydrostatic test should be used instead of air or compressed gas if possible. When air or compressed gas is used for testing, tremendous amounts of energy can be stored in the system. If a failure occurs, the energy may be released catastrophically, which can result in property damage and personal injury. In cases where system contamination or fluid weight prevents the use of hydrostatic test, air test may be used with extreme caution. To reduce the risk of air testing, use the use the table below to determine maximum pressure. When pressurizing the system with air or compressed gas, the area surrounding the piping must be cleared of personnel to prevent injury. Hold air pressure for one hour, then reduce the pressure to one half the original. Personnel can then enter the area to perform soap test of all joints. Again, extreme caution must be exercised during air testing to prevent property damage or personnel injury. If air or compressed gas testing is used, NOV Fiber Glass Systems will not be responsible for any resulting injury to personnel or damage to property, including the piping system. Air or compressed gas testing is done entirely at the discretion and risk of management at the job site.

Maximum Allowable Air Test Pressure

Containment Pipe Size	3"-8"	10"	12"-16"
Pressure, psig	15	10	5

Anchors

Anchors are available to control pipe movement due to thermal expansion/contractions or fluid flow transients. Secondary containment anchors bond directly to the primary pipe and to the inside of the secondary containment fittings to eliminate relative movement between the two piping systems. The secondary piping can be anchored externally by the methods in Manual No. ENG1000 as required.

Custom Design

NOV Fiber Glass Systems can help you in solving secondary containment piping design problems. NOV Fiber Glass Systems also has experience in designing and installing double-wall secondary containment systems 16" diameter and larger. Contact NOV Fiber Glass Systems for additional information.

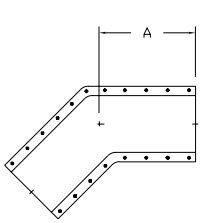
Dimensional Data for Containment Fittings

Containment[2] Size		A		B		C		D[1]		E		F		H		I		W	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
3	80	6	152	7	178	14	356	--	--	11	298	7	178	2	51	7	178	1½	38
4	100	7½	191	8	203	14	356	6	152	13	333	7	181	2	51	8	203	1½	38
6	150	8	203	9	229	16	406	8	279	15	387	8	203	2	51	9	229	1½	38
8	200	11	279	13	330	20	508	12	305	23¼	591	13	330	2½	64	14	356	1½	44
10	250	18	457	21½	546	24	610	15	381	32½	826	19	483	4³⁄₁₆	106	21½	546	1¾	44
12	300	21½	546	26	660	26¼	667	17	432	37½	953	22½	572	4³⁄₁₆	106	26	660	1¾	44
14	350	22½	572	27	686	28	711	29	737	43½	1,105	28½	724	5	127	27	686	1¾	44
16	400	22½	572	29	737	32	813	31½	800	47½	1,207	32	813	5	127	29	737	1¾	44

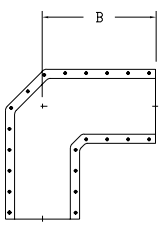
[1] The overall length is based on the largest size.

[2] Sizes 3"-6" are compression molded and 8"-16" are contact molded.

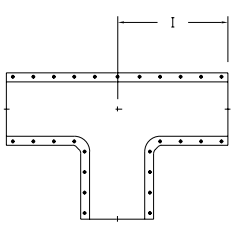
View of Fitting Illustrations



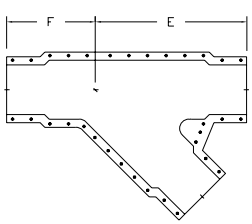
45° Elbow



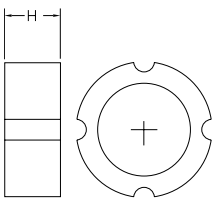
90° Elbow



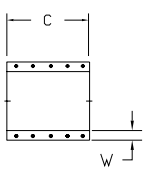
Tee



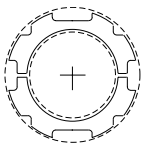
45° Lateral



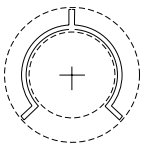
Anchor Assembly

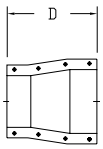


Coupling

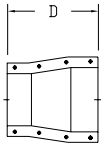


Centralizers





Concentric Reducer



Termination Fitting (Vented/Non Vented)

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