



F I B E R C A L D
C O N T A I N M E N T
P I P I N G



Fiberclad containment piping utilizes an outer steel containment casing protected with a totally non-corrosive outer layer of Fiberglass Reinforced Plastic (F.R.P.)

Features

Corrosion proof double wall containment piping system, pressure testable, leak detection / location systems available.

Fiberclad containment piping utilizes a totally non-corrosive exterior Fiberglass Reinforced Plastic (F.R.P.) cladding which is filament wound directly to the steel containment casing, thus eliminating the need for expensive and maintenance oriented cathodic protection systems

Carbon steel, stainless steel, or other types of carrier pipe utilized inconjunction with Fiberclad carbon steel or stainless steel containment casings.

Systems are prefabricated to job-site dimensions

Available Options

Multiple carrier pipe systems

Leak Detection / Location Systems

Heat Traced Systems

Black carbon steel, stainless steel or galvanized steel containment casings

Preinsulated Containment Piping Systems

Prefabricated valve pits and manholes

INSUL-TEK® Fiberclad Containment Piping

Insul-Tek® Fiberclad Containment Piping

- Hydrocarbons
- Process Fluids
- Chemical Transfer

Insul-Tek® Fiberclad Containment Piping

- Pressure testable double wall containment piping system
- Outer steel containment casing jacketed with 100 mils of corrosion proof Fiberglass Reinforced Plastic (F.R.P.) cladding
- No need for expensive and maintenance oriented cathodic protection systems

Insul-Tek® Fiberclad containment piping systems utilize a corrosion proof exterior cladding of Fiberglass Reinforced Plastic (F.R.P.). The F.R.P. cladding is filament wound directly on to the exterior steel containment casing thus providing a 100 mil thick corrosion barrier on the steel containment casing. The composite material; **steel and fiberglass**, provides the **durability and strength of steel** and the **corrosion resistance of Fiberglass Reinforced Plastic (F.R.P.)**. Insul-Tek® Fiberclad piping is an alternative to the outdated type of steel containment piping that is dependant upon some type of coating that is applied to the surface of the steel casing. Such coatings are highly susceptible to damage during loading, off-loading and during installation. Coated steel systems also require expensive and maintenance oriented cathodic protection systems. **Fiberclad piping systems** gives the installers the **weldability of steel** and the end user the **corrosion resistance of Fiberglass Reinforced Plastic (F.R.P.)** - the best of both worlds.

PRODUCT DESCRIPTION

Carrier Pipe

The carrier pipe(s) can be any type of pipe commercially available, including; carbon steel, stainless steel, F.R.P., or other types depending upon application. Please contact factory for recommendations.

Secondary Containment

The secondary containment casing can be carbon steel or stainless steel depending upon application. The secondary containment casing is protected by a corrosion-proof barrier of Fiberglass Reinforced Plastic (F.R.P.) The F.R.P. cladding is filament wound directly on to the secondary containment casing after it has been sand blasted to an SP-7 surface finish. The cladding is a minimum of 100 mils in thickness.

Filament Winding Process

Pipe Supports

The pipe supports will be constructed of steel and will be designed to permit complete draining of the outer containment casing in the event of a leak. All pipe(s) within the secondary containment casing will be supported at not more than 10' intervals. When utilized in conjunction with a leak detection/ location system, the pipe supports will have flared end stainless steel guide tubes to facilitate cable pulling and to avoid damage to the cable during the pulling process.

Leak Detection / Location Systems

Fiberclad containment piping systems can be fitted with a leak detection / location system that is capable of not only providing notification of a leak, but is also able to pinpoint the exact location of the leak. This is accomplished by utilizing a continuous sensing cable in-conjunction with an alarm / locator module. There are (3) three different types of sensing cables available; one detects water, one detects aqueous liquids (acids, bases and water), and one detects hydrocarbons (fuels and solvents) but is insensitive to aqueous liquids. Please consult factory for additional information pertaining to leak detection / location systems.

Available Options

Insul-Tek® Fiberclad containment piping systems can be designed to incorporate more than (1) one carrier pipe within a single containment casing. Insul-Tek® can also supply preinsulated, and/or heat traced containment piping systems to suit the customers needs. Leak detection / location systems and low point monitoring systems are available as well. All leak detection systems are completely engineered and supplied as turn-key systems, Totally prefabricated containment valve pits and manholes are also available. Please consult factory for other options.

Key Features of Insul-Tek® Fiberclad Containment Piping Systems

- Totally non-corrosive fiberglass clad steel containment casing
- Systems totally prefabricated to job site dimensions
- Engineered drawings and part numbered installation drawings furnished for all projects
- Factory field service available
- Optional leak detection / location systems available



Fiberclad Containment Piping



Specifications for Insul-Tek® Fiberclad Double Wall Containment Piping

General

All double wall containment piping shall be Fiberclad Containment Piping as manufactured by Insul-Tek® Piping Systems, Inc. All straight lengths pipe, fittings and accessories shall be factory prefabricated by the manufacturer. No field fabrication of fittings or accessories will be allowed. All secondary containment welds completed at the factory shall be 100% air tested prior to shipment. The containment piping system shall be drainable and air pressure testable. Contractor fabricated systems, whether fabricated on-site or off-site shall not be allowed. The containment piping manufacturer shall supply a complete design submittal including: engineered drawings, catalog cut sheets, and a full pipe stress analysis in accordance with ANSI B31.3 latest edition. The calculations shall be stamped by a Registered Professional Engineer.

Carrier Pipe

The carrier pipe shall be carbon steel, beveled for welding. Pipe sizes 2" through 10" shall be Schedule 40 A53 Grade B, ERW Steel. Sizes larger than 10" shall be standard wall thickness. Pipe sizes 1-1/2" and smaller shall be A106/A53 seamless type. All joints for pipe 2-1/2" and larger in size shall be butt welded. Sizes 2" and smaller shall be socket welded.

Secondary Containment Casing

The secondary containment casing shall be carbon steel, in accordance with ASTM A-139 Grade B, ASTM A-135 Grade B, or ASTM A-53 Grade B. The containment casing shall be the thickness as listed below

Conduit Size	Conduit Thickness
3"- 4"	Sch 10 or .120"
5"-26"	10 Gauge or .134"
28"-36"	06 Gauge or .187"

The carbon steel containment casing shall have a Fiberglass Reinforced Plastic (F.R.P.) external cladding of not less than 100 mils thickness. The F.R.P. Cladding shall be filament wound directly on to the carbon steel casing after it has been sand blasted to a SP-7 surface finish. All field joints on the containment casing shall be welded, air-tested and covered with a heat shrink sleeve or covered with a hand lay-up of fiberglass cloth and polyester resin. All containment casing will be subjected to a holiday test utilizing a 10,000 volt electrical resistance holiday detector.

Pipe Supports

All pipe within the containment casing shall be supported at not more than 10' intervals. The supports shall be designed to allow for draining of the containment casing in the event of a leak.

Leak Detection / Location Systems

The leak detection / location system shall utilize a continuous monitoring cable in conjunction with an alarm / locator module. The leak detection system shall be capable of not only detecting a leak, but also be able to pinpoint the exact location of the leak. The leak detection cable shall be capable of detecting water, aqueous liquids (acid, bases and water), or hydrocarbons, depending the type of fluid being conveyed. The containment piping system shall be designed to allow pulling of a leak detection cable into the containment casing. To facilitate pulling of the cable, pull ports shall be located a maximum of 500 feet apart for straight runs and reduced by 150 feet for every 90° change in direction.

Installation

The installing contractor shall weld the carrier pipe in accordance with ANSI B31.3 latest edition. After welding, the carrier pipe shall be hydrostatically tested to 50 psig or 1 1/2 times the operation pressure, whichever is greater. The containment casing shall be air tested to 10 psig after welding. The test pressures shall be held for no less than (1) one hour. The containment casing shall be kept clean and dry at all periods during the installation. The installing contractor must adhere to all directions relating to the installation provided by the containment piping system manufacturing.

Backfill

A 4" layer of sand or fine gravel shall be tamped in the trench to provide a stable and uniform bedding for the conduit system. Once the conduit system is in place, the trenches shall be carefully backfilled and hand tamped in 6" layers until a cover of at least 24" from the top of the pipe has been achieved. The first 12" of backfill shall be sand or fine gravel less than the 1/2" in diameter. The remainder of the backfill shall be void of rocks, frozen earth and foreign material over 6" in diameter. The trench shall be compacted to comply with H-20 Highway loading.

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