

Rovanco®

Piping Systems

ABOVE/BELOW GROUND DOUBLE CONTAINMENT PIPING

- **Leak Detection**
- **Cathodic Protection**
- **Field Service Training**

Engineered for transferring heating oil, fuel oil, natural gas, chemicals, solvents, process waste, gasoline, jet fuel and acids.



Rovanco Piping Systems, Inc.

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**ISO 9001:2015
CERTIFIED COMPANY**

 **PRI Registrar**
PERFORMANCE REVIEW INSTITUTE

Prevents material being transferred from contaminating the soil, ground water, or air.

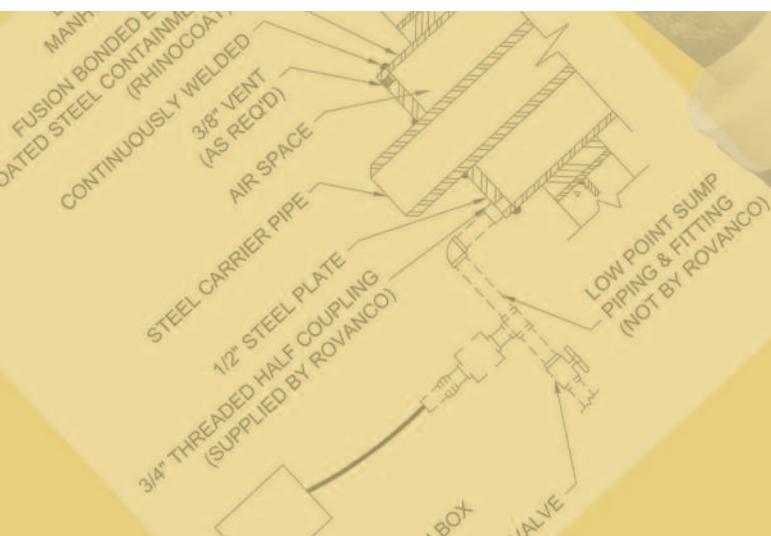
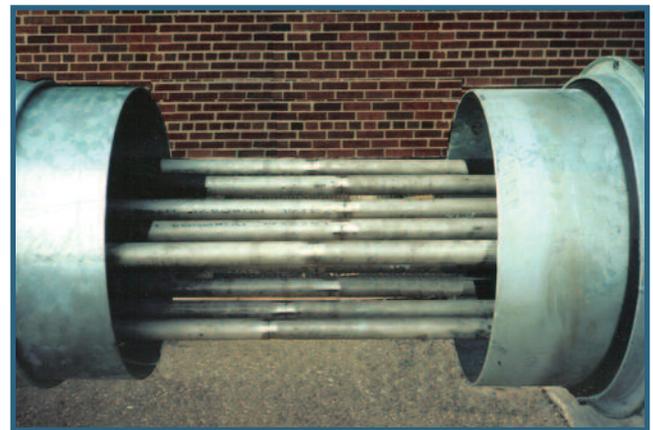
Why Containment Piping

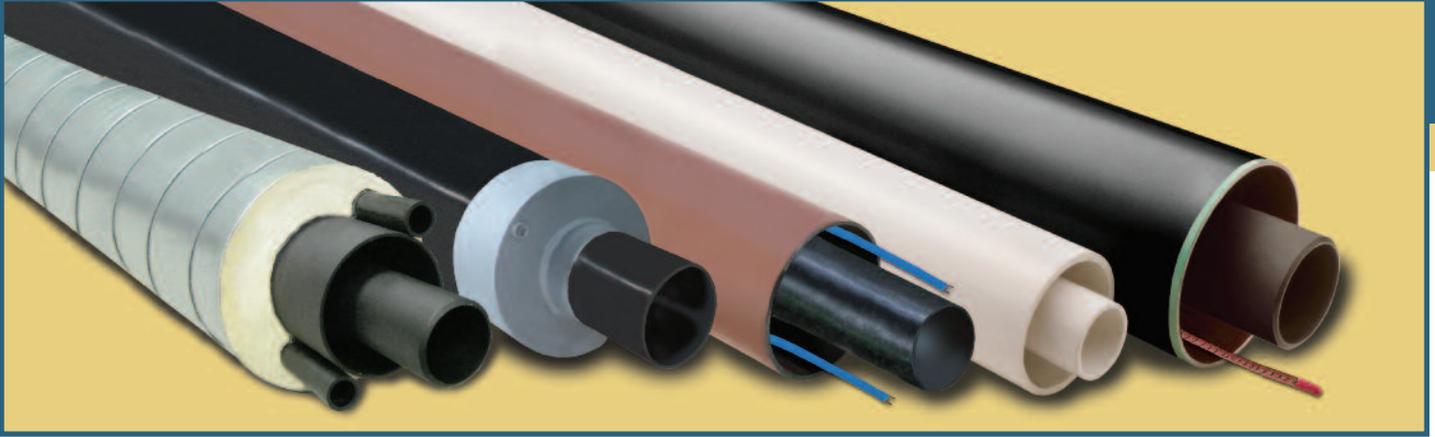
- Engineered to contain fluids within the piping system so leaks are safely controlled and detected.
- Complete Above and Below Ground Systems prevent materials being transferred from endangering personnel or contaminating the soil, ground water, or air.
- Systems are designed so leaks can be detected, easily located, drained and repaired quickly.



Built To Your Specifications

- A variety of outer jacket options including Fiberglass, Schedule 40 PVC, 10 gauge steel conduit with Red Mil (Above Ground) and 10 gauge steel conduit with 20 mils of fusion bonded Rhinocoat® epoxy coating (Below Ground).
- Several carrier pipe options are available including black steel pipe, stainless steel, PVC schedule 40/80 solvent weld and fiberglass. Other options available based on requirements.
- Can be manufactured with more than one inner pipe when several products are being conveyed to the same location. Multiple carrier pipes can be made of different materials.





Above/Below Ground Double Containment Piping By Rovanco

Rovanco's Containment Piping Systems are engineered and manufactured to meet and/or exceed today's safety and regulatory requirements.

- **Contact Rovanco for engineering assistance.**
- **Rovanco can design your system leak detection ready with a cable system or low point.**
- **System allows for pinpoint location of leaks. Low Point Sumps offer leak detection at intervals. Rovanco can also pre-insulate your containment pipes.**
- **Available with heat tracing components integrated into the system.**
- **Leak Detection & monitoring via continuous wire.**
- **Thousands of successful projects designed and manufactured by Rovanco!**



STANDARD SPECIFICATIONS FOR CONTAINMENT PIPING SYSTEMS

For complete and more detailed specifications, please contact the Rovanco factory

Carrier Pipe:

Carbon Steel: A53B Black Steel pipe, Seamless or ERW, in pre-cut lengths. Pipe 10" and smaller shall be Schedule 40. Pipe 12" and larger shall be .375 wall. (Schedule 80)

PVC: Schedule 40/80 solvent weld. Other classes and schedules of PVC pipe are available.

Fiberglass:

Bondstrand 3000L, Red Thread II A or Green Thread conforming to ASTM D2996.

Inner Pipe Supports:

All pipe shall be aligned and supported within the outer casing with nonmetallic pipe supports spaced on approximately every 10' 0" which are designed to allow free air and fluid movement within the containment pipe. The supports will be designed and spaced to carry the weight of the carrier pipe full of fluid with a 50% safety factor while allowing the carrier pipe to expand and contract. Concrete type pipe supports will not be allowed.

Outer Containment Casing:

PVC: The outer casing shall be Schedule 40 PVC conforming to ASTM 1785.

Fiberglass: Filament wound fiberglass pipe constructed of continuous glass fibers in a matrix of aromatic amine cured epoxy resin.

Steel: Outer casing shall be black steel. Casing up through 24" shall be 10 gauge. Casing 26" and larger shall be 6 gauge. The exterior surface will be coated with a two coat Fusion Bonded Epoxy system. The first coat will be green finish coat with a melting point of 500°F. No glasswrap or filler materials shall be used in the epoxy. All exterior conduit surfaces shall be shotblasted prior to the coating being applied.

No asphalt, coal tar coating, FRP casing or any other type will be allowed.

The second layer will be compatible Fusion Bonded Epoxy coating. This layer of Fusion Bonded Epoxy will be applied no later than 5 seconds after the first layer. The second layer must have an impact resistance of at least 160 lbs. per square inch as per ASTM G14-72. The coatings will be applied in a total thickness of not less than 20 mils. The coating system will be equal to Rovanco Piping Systems-Rhinocoat™. Epoxy shall conform to these ASTM standard: ASTM D1763, ASTM G17, ASTM, D1044, ASTM D2370, ASTM G14, ASTM G8, ASTM D968, ASTM D1002, ASTM D659, ASTM D257, ASTM D1000, ASTM G53, ASTM B117.

For above ground applications, the steel casing, fitting covers and closure joints will be hot dipped galvanized coated.

Fittings:

PVC: Shall be factory pre-fabricated PVC, the same thickness as the containment casing.

Steel: All changes in direction shall be made with bent or weld fittings. Where tee branches are smaller than the mains they join, weld-on-lets may be used. All fittings shall be the same wall thickness as adjacent piping.

Fiberglass: All fittings will be filament wound, heavy duty, bell & spigot type with a .020 interior liner in conformance with MIL-P28584A and MIL-P22245A. 90° elbows will be long radius only.

Anchors:

Steel: Anchors shall be pre-fabricated onto the piping units and shall be equipped with drainage and vent openings at the top and bottom of the anchor plate. Anchor plates shall be made of 1/2" steel plate.

Fiberglass: FRP pipe should be joined to steel systems inside buildings with flanges. All steel systems should be anchored within five feet of connection point to eliminate any thrust, stress, or torque from the steel pipe being transferred to the FRP. Steel flanges should be 150# flat faced.

End Seals:

PVC: Fernco Cap

Steel: Terminal ends inside manholes, pits, or building walls shall be equipped with end seals consisting of a steel bulkhead plate welded to the pipe conduit. End seals shall be made of 1/2" steel plate with drain or vent openings located diametrically opposite the vertical center line of the mounting plate and shall be shipped to the job site with plugs in place. Terminate containment 2 inches beyond the inside face of building walls to protect any exposed piping from damp wall condensation.

Fiberglass: Terminal ends of containment inside manholes, pits, or building wall shall be equipped with end seals.

Field Tests:

PVC: Testing and certification procedures shall demonstrate that the casing, fittings and end seals are capable of passing a pressure test certified by an independent testing agency.

Steel: The inner pipes of this system shall be tested hydrostatically to 1 1/2 times the working pressure of the line. If a leak is

found, it shall be repaired and the test repeated. The outer casing shall be tested with air at 15 psig and a soap solution shall be applied to the field joints to locate leaks. If leaks occur, they shall be repaired and the test repeated. After approved by test, all field joints shall be coated by the contractor. Before backfilling, the contractor shall test the containment coating with an electric holiday detector. Any breaks in the coating system will be repaired and the test repeated by the contractor.

Fiberglass: The inner pipes of this system shall be tested hydrostatically to 1 1/2 times the working pressure of the line. The outer casing shall be tested with air at 5 psig max. and a soap solution shall be applied to the field joints to locate leaks. If leaks occur, it shall be repaired and the test repeated.

Backfill:

Should be tamped compactly in place so as to assure a stable surface. No rock should be used in the first foot of backfill. 24 inches, top of pipe to grade, of compacted fill shall meet H-20 Highway Loading.

Installation:

The installation shall be done in accordance with plans and specifications and manufacturer's installation drawings and instructions. The containment pipe manufacturer will provide a field service technician on-site to train the contractor and his personnel in all phases of installation. No contractor or field fabricated systems will be allowed.

Approved Vendors:

PVC: Rovanco PVC Containment Pipe System or "Approved Equal".

Steel: Steel Containment System by Rovanco, Joliet, Illinois, or approved equal. Any alternate supplier must submit their technical data to the engineer ten days prior to bid date to be approved in writing as an equal.

Fiberglass: FRP Containment Pipe System by Rovanco, Joliet, Illinois or approved equal. Any alternate supplier must submit their technical data to the engineer ten days prior to bid date to be approved in writing as an equal.

Contact Rovanco for Leak Detection.

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