Rovanco®

Piping Systems

STAINLESS STEEL DOUBLE CONTAINMENT PIPING

- Stress Analysis & Design
- Leak Detection
- Cathodic Protection
- Field Service Training

Engineered for transferring hazardous chemicals, solvents, process waste, industrial waste and acids.

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

Why Engineers & Contractors Choose Rovanco Stainless Steel Double Containment

- Engineers choose Rovanco for our over 50 years of experience in the industry.
- Rovanco assists engineers in the design stage.
- Rovanco provides submittal drawings with stress calculations for steam cleaning of these types of systems.

Rovanco Quality Engineering & Manufacturing

- Rovanco meets all welding certifications for stainless steel.
- Rovanco is ISO-9001 certified.
- Rovanco's ability to spool systems out results in minimal work in the field for contractors.
- Rovanco's proven track record with pharmaceutical companies and their corresponding projects.

Stainless Steel Double Containment Piping By Rovanco

Rovanco will assist in design at the engineering stage making sure expansion compensation is taken into consideration before submitting drawings.

Rovanco also assists in writing the specifications for that particular application so the budget can be defined, effectively managed and remains within established parameters.

Since Rovanco has experience with a wide array of different applications, it proves an invaluable asset when it comes to helping engineers choose the correct product configuration. Should jacket be bare stainless steel or coated stainless steel? Do you choose a fiberglass, copper, carbon or stainless steel carrier pipe? And if a stainless steel carrier pipe, should it be Schedule 10, Schedule 40, 316L or 304?, etc... Rovanco has earned the reputation for being a knowledgeable source which is why engineers look to Rovanco project after project.

Once awarded the project, Rovanco works with the contractor on laying its system out so it can be spooled out. This results in a minimal amout of work for contractors in the field.

Rovanco Containment Piping Systems are precisely constructed using the best materials and expert craftsmanship. Whether it's an Above Ground or Below Ground system, you are assured Rovanco's thousands of miles of experience is engineered into every inch of containment pipe you receive.

STANDARD SPECIFICATIONS FOR STAINLESS STEEL DOUBLE CONTAINMENT PIPING SYSTEMS

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

Carrier Pipe:

Sch 10 or Sch 40 stainless steel type 304L or 316L welded. Other piping materials also available.

Inner Pipe Supports:

All pipe shall be aligned and supported within the casing with centering supports made of stainless steel and spaced on approximately 10'0". The inner pipe shall bear directly on the support. The support shall be designed as to permit drainage and free air passage. Supports will be manufactured in a way to allow for a pull rope so that the leak detection cable can be easily pulled through for (optional leak detection cable).

Outer Containment Casing:

Outer Casing shall be Sch 10 or Sch 40 stainless steel type 304L or 316L welded. Or Outer casing shall be black steel. Casing up through 24" shall be 10 gauge. Casing 26" and larger shall be 6 gauge.

The interior surface shall be smooth to permit free moisture drainage and removability of the inner assembly. The outer casing shall be sized to provide an adequate annular space between the outer surface of the insulation material and the interior surface of the casing.

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 shot-blasted prior to the coating being applied. The Fusion Bonded Epoxy shall conform to these ASTM Standards:

ASTM D1763	Disclosure of properties of the epoxy sub-components
ASTM G17	Penetration test
ASTM D1044	Abrasion resistance
ASTM D2370	Tensile strength
ASTM G14	Impact tests
ASTM G8	Salt crock
ASTM D968	Abrasion tests
ASTM D1002	Sheer strength and adhesion
ASTM D659	Compressive strength
ASTM D257	Volume resistivity
ASTM D1000	Electric strength
ASTM G53	Weathering
ASTM B117	Salt fog

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

The second layer will be compatible Fusion Bonded Epoxy coating that will provide mechanical protection to the first layer. The second layer of Fusion Bonded Epoxy will be applied no later than 5 seconds after the first layer has been applied so that it securely bonds to the first layer as both layers cure. The second layer must have an impact resistance of at least 160 lbs. per square inch as per ASTM G14-72. The Fusion Bonded Epoxy coating will be applied in a total thickness of no less than 20 mils. The coating system will be equal to Rovanco Piping Systems-Rhinocoat™.

Outer conduit casing closures shall consist of 10 gauge steel or stainless steel suitably rust-proofed and in cylindrical form with a single horizontal split and shall be field welded over adjacent units.

After tests all exposed closures shall be covered in the field with a polyethylene heat shrink material with minimum thickness of 60 mils.

For above ground applications, the steel casing, fitting covers and closure joints will be red milled 6-8 mils coated or will be bare stainless steel.

Weld Fittings:

All changes in direction shall be made with bent or weld fittings. Where tee branches are smaller that the mains they join, weld-o-lets may be used. All weld fittings shall be long radius and shall be the same wall thickness as adjacent piping. Std Tangent fittings allowed.

Leak Detection:

Nema 12 alarm panel-120v TTDM-128 and shall find leak within 1 foot. TT5000 leak detection cable meet ASTM D-543. These shall be furnished by pre-insulated pipe manufacturer. Low point also available (optional).

Anchors:

Anchors shall be prefabricated 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 ½" stainless steel plate. Carbon steel anchor shall never touch stainless steel carrier pipe and shall be isolated.

End Seals:

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 ½" stainless steel plate with drain or vent openings located diametrically opposite on the vertical center line of the mounting plate and shall be shipped to the job site with plugs in place. Terminate all conduits 2 inches beyond the inside face of building walls to protect any exposed piping insulation from damp wall condensation.

Field Tests:

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 15psig 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 conduit coating with an electric holiday detector. Any breaks in the coating system will be repaired and the test repeated by the contractor.

Backfill:

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

Installation:

The installation shall be made in accordance with plans and specifications, and manufacturer's installation instructions. Pre-insulator will provide a field service instructor on site to train the contractor for 3 phases of installation. One additional field service to be made to commission leak detection system.

Approved Vendors:

Stainless Steel Double Containment System by Rovanco, Joliet, Illinois, or approved equal. Any alternate supplier must submit their technical data to the engineer 10 days prior to bid date to be approved in writing as equal.

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