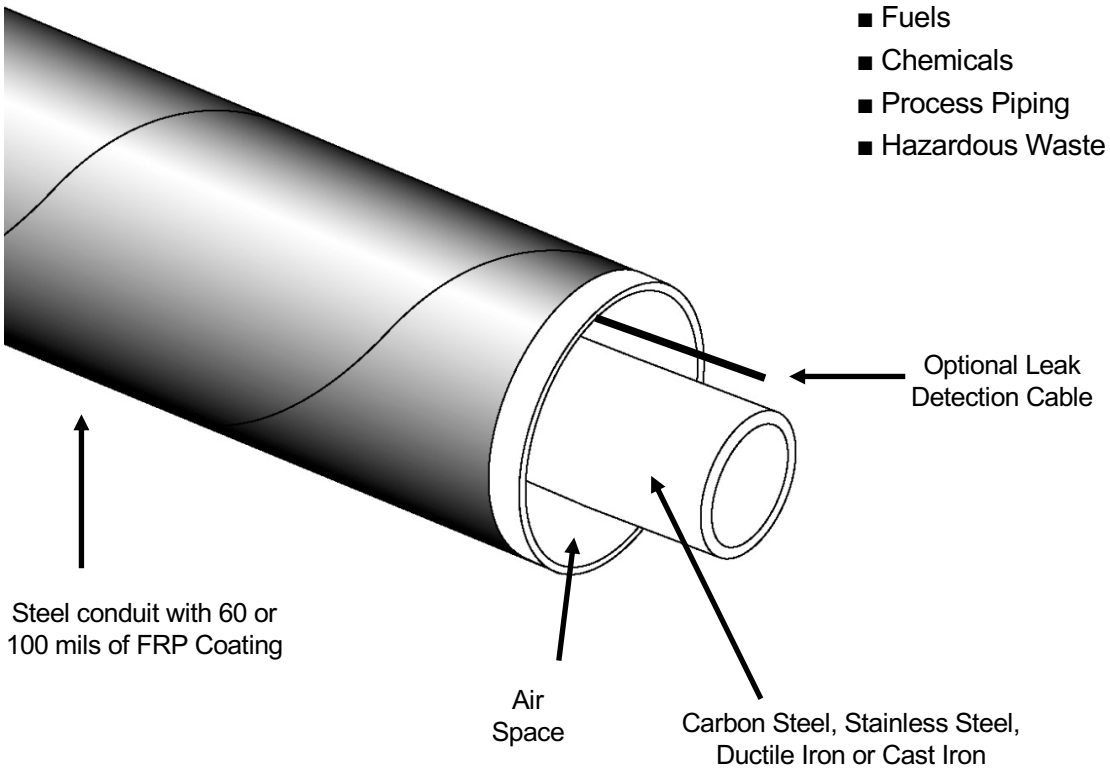
Rovanco Steel Jacketed with FRP Coating Containment Pipe

For Above or Below Ground Applications



- Fuels
- Chemicals
- Process Piping
- Hazardous Waste

Rovanco's Containment Conduit is designed for piping systems with durable 10 gauge minimum thickness metal conduit. Supplied in 20' or 40' lengths, means an economical, high-quality system.

It is provided with part numbered spooled out, cut-to-length pieces factory manufactured to field dimensions. All elbows and tees are manufactured at Rovanco's plant, or as a Rovanco Quick-Fit field fabricates system.

For below ground installations, the outer conduit is coated with nominal 60 or 100 mils of FRP.

For above ground applications, this product can be used for above ground applications as well.

The containment comes complete with steel sleeves the same thickness as the conduit, and shrink sleeves and coatings to make the installation completely watertight – the right product for applications of fuels, chemicals, etc.

To find out more about Rovanco's steel FRP containment system, you can visit our factory, phone us (815) 741-6700, fax us (815) 741-4229, visit our website at www.rovanco.com or e-mail us at marketing@rovanco.com.

This is a generic product datasheet and is not intended for submittal use.

GUIDE SPECIFICATION

Carrier Pipe:
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). Other piping materials and thicknesses also available. Also available with Stainless Steel, Ductile Iron or Cast Iron inner carrier pipes.

Inner Pipe Supports:
All pipe shall be aligned and supported within the casing with centering supports 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. Concrete type pipe supports will not be allowed.

Outer Containment Casing:
Outer casing shall be black steel. Casing up through 24" shall be 10 gauge. Casing 26" and larger shall be 6 gauge. Other thicknesses also available.

The exterior 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 pipe material and the interior surface of the casing.

Outer casing closures shall consist of 10 gauge steel suitably rustproofed 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 polyurethane heat shrink material with a minimum thickness of 60 mils.

Diameters	Minimum Thickness
3" – 5"	Schedule 40
6" – 26"	10 Gauge
28" – 36"	6 Gauge
38" – 42"	4 Gauge

The carbon steel containment pipe shall have a fiberglass reinforced polyester (FRP) external cladding, .100 inch thick. The cladding shall be applied to a shot blasted steel surface that meets SSPC SP-7 surface finish.

The cladding on straight sections shall consist of multiple layers of helical windings of continuous glass reinforcements applied at a winding angle of 58º to 62º. The cladding on fittings shall consist of either a chopped spray-up polyester resin/fiberglass reinforcement composite, or wrapping of glass cloth fully saturated with a two part catalyst adhesive.

All field joints shall be covered with a wrapping of glass cloth, fully saturated with a two part catalyst adhesive, identical in properties to the factory applied cladding system. The minimum thickness of the field hand lay-up shall be .06 or .100 inches.

All containment pipe shall be subjected to a holiday test using a 35,000 volt electrical resistance holiday detector.

Pipe Supports:
Supports shall be steel and shall be designed and factory installed by the secondary containment manufacturer at a maximum interval of 10 feet. When used with a leak detection/location cable, the supports shall have flared end stainless steel guide tubes that facilitate cable pulling and prevent cable damage during pulling operations.

Leak Detection/Location System:
The secondary containment system manufacturer shall furnish a PAL-AT cable type leak detection/location system. The piping shall be designed to allow pulling of the leak detection cable into the containment pipe, both during and after piping installation. Containment pull ports shall be located a maximum of 500 feet apart for straight runs and reduced by 150 feet for every 90º change in direction.

The leak detection/location system shall consist of a microprocessor based panel capable of continuous monitoring of a sensor string for leaks/faults. The unit shall have a sensing range of [5,000] feet per cable [with up to eight cables per panel]. The alarm unit(s) shall operate on the principle of pulsed energy reflection and be capable of mapping the entire length of the sensor cable.

Sensor cable shall be of fluoropolymer and polymer coated wire construction, with no exposed metal parts. Cable shall detect water-based, chemical, and hydrocarbon liquids.

Weld Fittings:
All changes in direction shall be made with bent or weld fittings. Where tee branches are smaller than the mains they join, weld-o-lets may be used. All fittings shall be the same wall thickness as adjacent piping. Fittings can be factory pre-fabricated or field fabricated Quick-Fit.

Anchor:
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 ½" steel plate.

End Seal:
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 a ½" 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 jobsite with plugs in place. Terminate containment 2 inches beyond the inside face of building walls to protect any exposed piping from damp wall condensation.

Field Tests:
The inner pipe of the 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.

Backfill:
Should be tampered compactly in place so as to assure a stable surface. No rock shall 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 made in accordance with plans and specifications, and manufacturers installation instructions. Manufacturer will provide a field service instructor on-site prior to fabrication of the piping to confirm routing, anchoring, support, and termination details. The field serviceman will also train the contractor in all phases of installation.

Approved Vendors:
FRP Clad Steel Containment System by Rovanco, Joliet, Illinois or approved, ISO Certified, 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.

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Contact Rovanco® for the name of your local Representative

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