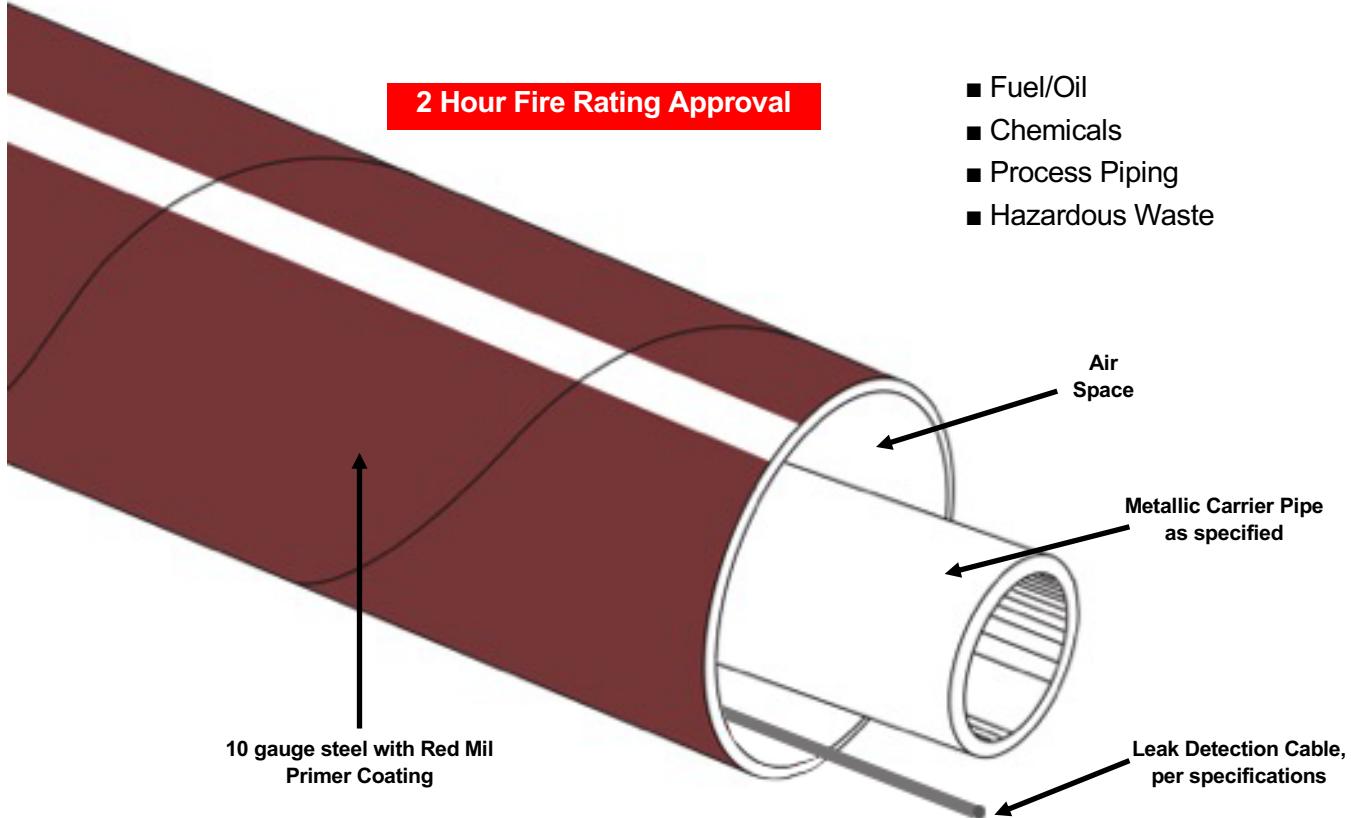


# Rovanco Red Mil Steel Containment with Leak Detection

For Above Ground Applications



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.

Rovanco can provide pre-fabricated fittings or the contractor favorite Quick Fit fitting covers. Quick Fit enables the contractor flexibility and the ability to re-route easily.

The outer conduit is coated with nominal 4-6 mils of Red Mil Primer. Red Mil Primer is a rust inhibitor and keeps the jacket corrosion resistant.

The containment comes complete with steel sleeves the same thickness as the conduit – the right product for applications of fuels, chemicals, etc.

To find out more about Rovanco's Red Mil containment system, you can visit our factory, phone us (815) 741-6700, fax us (815) 741-4229, visit our website at [www.rovanco.com](http://www.rovanco.com) or e-mail us at [marketing@rovanco.com](mailto:marketing@rovanco.com).

# 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.

## 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.

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 pipe material and the interior surface of the casing.

The exterior surface will be coated with 4-6 mils of Red Mil Primer. Red Mil Primer must be corrosion resistant and meet class A for slip coefficient. It must also meet performance comparable to products formulated to Federal specifications: Mil-P-23377 and Mil-P-53022. Steel surface must be clean, dry and in sound condition. Remove all oil, dust, grease, dirt, loose rust and other foreign material to endure adequate adhesion. The Red Mil Primer shall conform to these ASTM standards:

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1kg load	200 mg loss
Accelerated Weathering – QUV <sup>1</sup>	ASTM D4587, QUV-A, 5,000 hours	Passes
Adhesion	ASTM D4541	1050 psi
Corrosion Weathering	ASTM D5894, 13 cycles, 4,368 hours	Rating 10 per ASTM D714 for Blistering; Rating 7 per ASTM D610 for Rusting
Direct Impact Resistance	ASTM D2794	160 in. lbs.
Dry Heat Resistance	ASTM D2485	250°F (121°C) (dis-colors)
Flexibility	ASTM D522, 180° bend, 1" mandrel	Passes
Moisture Condensation Resistance	ASTM D4585, 100°F (38°C), 2000 hours	Passes, no cracking or delamination
Pencil Hardness	ASTM D3363	3H
Salt Fog Resistance <sup>1</sup>	ASTM B117, 5,600 hours	Passes, no cracking or delamination
Slip Coefficient, Red Oxide	AISC Specifications for Structural Joints Using ASTM A325 or ASTM A490 Bolts	Class A, 0.50

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

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 painted with Red Mil Primer.

For above ground applications, the steel casing, fitting covers and closure joints can be Red Mil Primed.

## Leak Detection:

Leak detection cable shall be located in the air space with model based on the liquid being conveyed. Various cable models available that can detect water, oil, fuel & other hydrocarbons, conductive liquids or as specified. Leak detection cable will be provided by the piping system manufacturer.

## Weld Fittings:

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

## 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 1/2" steel plate. Anchor shall be red mil primed.

## 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 1/2" 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. End Seals shall be red mil primed.

## 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.

## 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 to train the contractor in all phases of installation.

## Approved Vendors:

Red Mil Steel Containment System by Rovanco, Joliet, Illinois or approved equal. Any alternative supplier must be ISO 9001 Certified and 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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