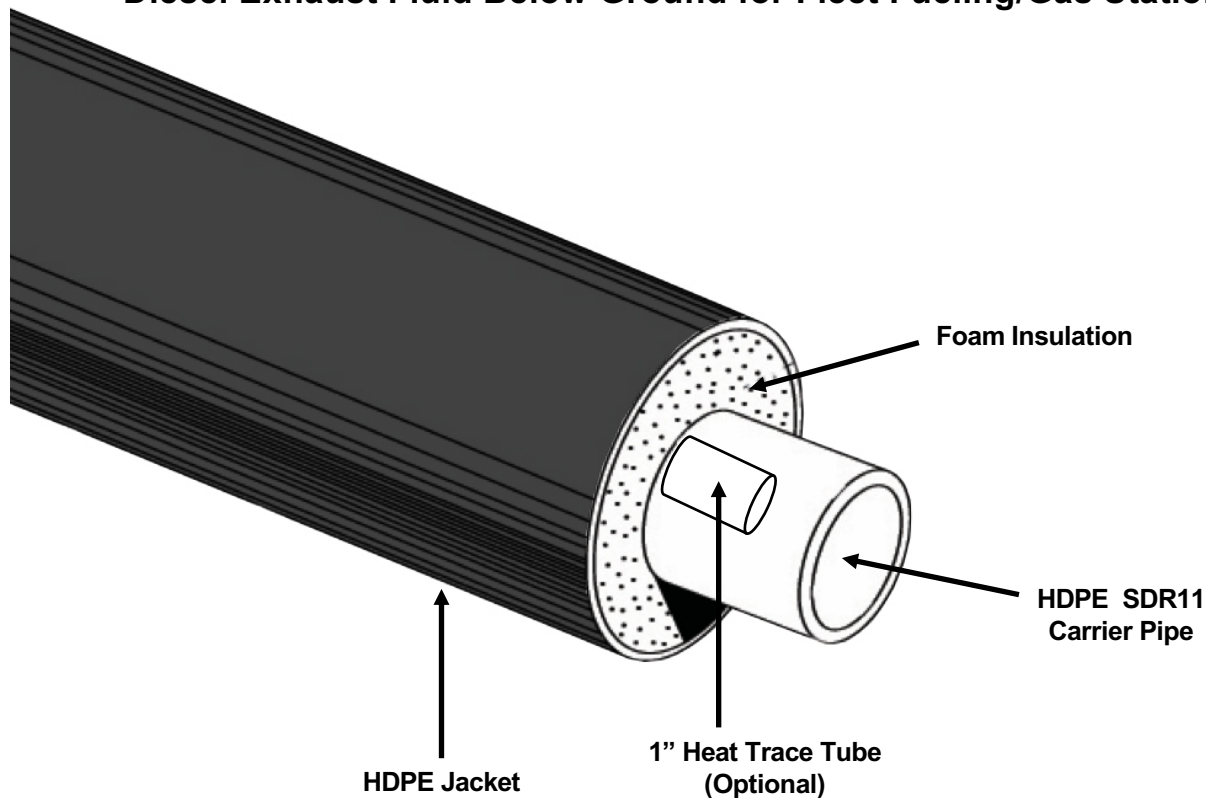


# Rovanco DEF Piping

## Diesel Exhaust Fluid Below Ground for Fleet Fueling/Gas Station



Rovanco's DEF Piping System is designed for piping systems below ground suitable for indoor and outdoor applications. High quality non-flammable foam insulation combined with a durable watertight jacket supplied 20' lengths, means an economical, high-quality system.

Rovanco's DEF Piping System is provided with a jacketing of HDPE, which can be supported from the outside with maximum supports spans. Fittings are field insulated.

The DEF System comes complete with the HDPE carrier pipe, HDPE electro-fusion fittings, joint insulation materials and jacketing to make the installation completely watertight.

To find out more about Rovanco's DEF Piping 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).

\* For a different carrier pipe, consult factory.

# SPECIFICATION FOR DEF PIPING SYSTEM – Below Ground

## Carrier Pipe:

The HDPE pipe shall be made of polyethylene resin compound with a minimum cell classification by PE445474C for PE4710 materials per ASTM P3350 and D2837. Shall contain 2% dispersed carbon black.

Piping and fittings are available in 10 different pressure classes as designated by dimensional ratios (DR) from 32.5 at 50 psi through 6.3 at 300 psi for water service at 73°. Assembly is by thermal butt fusion for a fast, economical; and long-term performance installation.

## Polyurethane Insulation:

Insulation shall be a polyurethane foam injected with one shot into the annular space between carrier pipe and jacket. Insulation shall be rigid, minimum 90% closed cell polyurethane with a minimum 2.0 lbs per foot<sup>3</sup> density, compressive strength of 30 psi @ 75°F and a thermal conductivity K factor no higher than 0.180 @ 75°F per ASTM C-518. Maximum operating temperature of urethane foam shall not exceed 250°F.

## Polyisocyanurate Insulation:

Insulation shall be a polyisocyanurate foam injected with one shot into the annular space between carrier pipe and jacket. Insulation shall be rigid, >90% closed cell polyisocyanurate with a minimum 2.0 lbs per foot<sup>3</sup> density, compressive strength of 30 psi @ 75°F, a thermal conductivity initial K factor no higher than 0.14 @ 75°F per ASTM C-518 and an E84 25/50 passive fire resistance rating. Maximum continuous operating temperature of polyisocyanurate foam shall not exceed 300°F.

## Jacket Material:

The outer casing shall be high density polyethylene (HDPE) conforming to ASTM D3350, Type III, Category 5, Class C and Grade P23/P34. With a minimum of 2% by weight of carbon black. Minimum thickness is 150 mils. No FRP overwrap or sprayed jacketing will be allowed. Minimum jacket thickness shall be in accordance with Table 1.

## Joining Method:

Straight lengths of pipe will be joined by HDPE electro-fusion fittings.

## Fitting:

All electro-fusion fittings will conform to pipe type and will be insulated and jacketed with materials supplied by the system supplier as per manufacturers' standard procedures.

Table 1:

Nominal Pipe Size In Inches	Minimum Insulation Thickness In Included	Jacket Size In Inches	Jacket Thickness In Mils
1-1/2	2.15	6.60	200
2	1.91	6.6	200
2-1/2	1.66	6.60	200
3	1.35	6.60	200
4	1.57	8.00	175
5	2.04	10.00	175
6	1.51	10.00	175
8	1.72	12.43	175
10	1.48	14.06	175
12	1.38	15.87	175
14	1.74	17.83	175
16	1.7	19.80	200
18	1.89	22.17	200
20	1.86	24.17	225

\* Larger pipe sizes are available upon request.

## End Seals:

Each length of pre-insulated pipe will be fitted with a watertight mastic end seal at jacket and pipe surfaces. All field cuts will be sealed with a field applied end seal.

## Insulation of Straight Joints:

After welding and testing, all joints shall be insulated and sealed as per manufacturers' standard procedures.

## Backfill: (if below ground)

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 to pipe to grade, of compacted fill shall meet H-20 Highway Loading.

## Manufacturer's Assistance:

Rovanco will provide a field service man on-site to properly train the installing personnel in all phases of installation, (if required).

## Approved Vendors:

DEF Piping Systems by Rovanco, Joliet, Illinois. All other manufacturers wishing to bid on this project must be ISO Certified and provide the engineer with certified test data from either foam manufacturer or an independent testing agency that the product is capable of withstanding the service temperature continuously. Foam must also be rated for 25/50 Flame smoke. The manufacturer shall obtain written approval from the engineer 10 days prior to bid date.

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**Contact Rovanco® for the name of your local Representative**

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