

- Saves Time
- Saves Money
- Increases Installation Options

Product: DEF-Trac® Diesel Exhaust Fluid single wall piping for DEF

Location: Central Maintenance Facility 1555 N. San Fernando Road, Los Angeles, CA 90065

Metrolink is a commuter rail system serving Southern California; it consists of seven lines and 55 stations operating on 388.2 miles (624.7 km) of rail network. It travels up to 79 miles per hour (127 km/h) and up to 90 mph on sections of the Orange County line.

The system operates in Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties, as well as to Oceanside in San Diego County. It connects with the Los Angeles County Metro Rail system, the San Diego Coaster commuter rail and Sprinter light rail services, and with Amtrak's Pacific Surfliner, Coast Starlight, Southwest Chief, and Sunset Limited intercity rail services.

The system, founded in 1991 as the Southern California Regional Rail Authority (SCRRA) and quickly adopting "Metrolink" as the marketing and user friendly moniker, started operation in 1992. Average weekday ridership was 41,951 in the fourth quarter of 2014.

Specifications: Provide DEF-Trac stainless steel tubing with a single layer uninsulated jacket. All flexible piping system components shall be approved for use in above ground and underground applications. All above ground piping is designed for continuous exposure and shall have a UV resistant jacket. All underground piping shall be designed for direct burial. All piping and components must be manufactured in an ISO 9001 certified facility and Termination fittings shall be manufactured from stainless steel, as specified in ISO 22241-3. Piping shall be made from T316 series Stainless Steel Strip conforming to ASTM A240. Piping shall not be subjected to heat treating or annealing after the corrugation forming operation and shall be rated for 50 Psig maximum operating pressure and 75 psi test pressure.

(From Project Specific Specifications IFB C3127-15 Volume 4)
Material: 850 feet of uninsulated non heat traced pipe and 65 fittings. The specifications required the contractor to insulate the pipe during the install.

Diesel Exhaust Fluid (DEF) is used in trains to reduce the nitrogen oxide (NOx) emissions from the exhaust gas of diesel engines which are equipped with SCR technology.

(continued on back)



(continued from front)



Contractor: Metro Builders & Engineers Group, Ltd., Newport Beach, CA. Has been in business in Southern California for 28 years doing Public Works projects. The company's mission is to contribute to our community through the building of complex projects that benefit the public at large.

According to Metro, the OmegaFlex piping was called for in the project specifications and has been proven to work successfully for these systems in the past. Our crew found the installation of these materials very straight-forward (2" DEF-Trac trunk line and 1-1/2" DEF-Trac drops to the fueling pads) The manufacturer team was very helpful when needed and they would utilize this system again if called for on another project.

Diesel Exhaust Fluid (DEF) is a non-hazardous solution, which is 32.5% urea and 67.5% de-ionized water. DEF is sprayed into the exhaust stream of diesel vehicles to break down dangerous NOx emissions into harmless nitrogen and water.

Diesel Exhaust Fluid is filled into a separate tank on the train. The Diesel Exhaust Fluid is injected from the tank into the exhaust pipe, which is in front of the SCR catalyst, but downstream of the engine. As it is heated in the exhaust, Diesel Exhaust Fluid changes into ammonia and CO2. When the nitrogen oxide (NOx) gases, from the exhaust pipe, react inside the catalyst with the ammonia, the harmful NOx molecules in the exhaust are converted into harmless nitrogen and water, which is released to the atmosphere as steam.

Omegaflex® offers a wide range of piping for Diesel Exhaust Fluid depending on the region of the country. For freeze protection, Omegaflex offers a pipe that is insulated and has a heat trace cable running inside the insulation. For warmer insulations that has high temperature concerns, Omegaflex offers a pipe that is insulated. In addition, Omegaflex offers a pipe that is non-insulated, non-heat traced. All of Omegaflex's DEF pipe can be installed above ground, direct buried, or in a chase pipe.

Established in 1975, OmegaFlex is the preeminent international producer of flexible metallic piping products. With over 200 patents registered worldwide, OmegaFlex supplies proprietary products for a broad number of applications and markets, which include primary steel production, semi-conductor, medical, pharmaceutical, petrochemical, residential and commercial construction, and power generation. OmegaFlex is a product and engineering-driven company committed to meeting the most stringent performance requirements for all of its customers.

The chart below shows the scheduled implementation of diesel powered equipment requiring DEF.

2009	Tier 2 Light Duty Trucks
2010	Heavy Duty Highway Trucks & Buses
2014	Non-Road Diesels
2015	Fuel Based Ocean Going Vessels
2016	SCR Catalyst Based Ocean Going Vessels
2017	Locomotive and Marine

