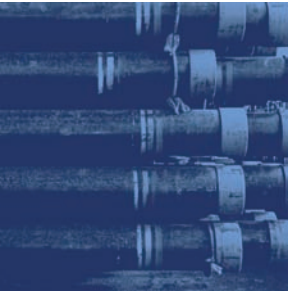




RICE | DUOLINE



Internal Lining Systems for Oilfield Tubular Goods

Your best choice for beating the high cost of corrosion



The Duoline System

The Duoline Lining System

Duoline provides corrosion protection for oilfield tubulars used under harsh oilfield conditions. Protection of the tubing string is achieved through a two part process, liner installation in Rice's manufacturing facility followed by field installation of the lined tubing string.

Liner Installation

The Duoline process consists of the insertion of a plastic or fiberglass-epoxy tube into the host pipe followed with the injection of a special grout into the annular space between the liner and the tubing. Flares are then installed over the pin ends to complete the establishment of a holiday free lining of the entire tubing joint.

Field Installation

When Duoline is run in the field, elastomeric rings called CBR's (corrosion barrier rings) are compressed inside the coupling during joint makeup. The result is a durable corrosion protection system that eliminates the potential joint failures commonly observed in the use of IPC systems.

Liner Selection

Duoline offers liner selections that are matched to your specific well applications and operating conditions.

DUOLINE 20

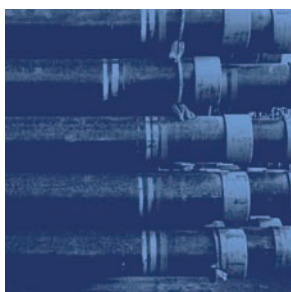
This lining system uses a filament wound fiberglass epoxy (FG) liner and is the solution for the majority of aggressive down hole applications. The liner is used in sweet and sour environments up to 121°C (250°F).

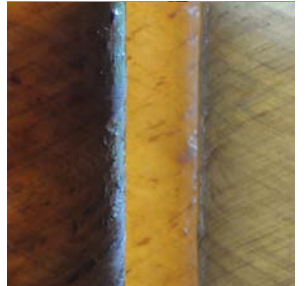
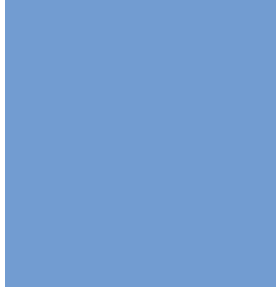
DUOLINE 10

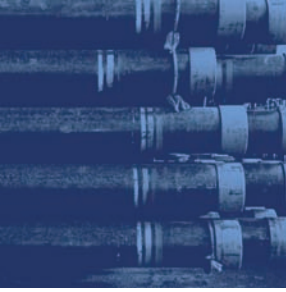
This lining system utilizes an extruded polyvinyl chloride (PVC) liner and is designed primarily for water disposal and water injection service up to 65°C (150°F).

DUOLINE 10 PE

This lining system uses a high density polyethylene (HDPE) liner and is primarily used where an abrasion resistant liner is required, such as rod pump wells.







Why use Duoline?

Duoline has proven to stand up to difficult conditions around the world.

Duoline has durability that extends the life of tubular goods even when conducting well intervention procedures.

Duoline extends the life of your tubing string by allowing for low cost refurbishment of previously run tubing.

Duoline lowers your cost of corrosion protection in aggressive well environments.

Proven Operating Experience

Duoline has a 45-year proven field history both onshore and offshore. It has been used by major oil companies around the world, in applications located throughout North and South America, Europe, the Middle East and Asia. Duoline performance is backed up by field case histories and laboratory testing programs.

Durability

Duoline provides a corrosion protection system that is more durable and longer lasting than IPC coatings. The Duoline lining system does not rely on a coating remaining “bonded” to the pipe wall and does not scratch, chip or flake off. It is abrasion resistant to both wireline and coiled tubing procedures.

Cost Effective

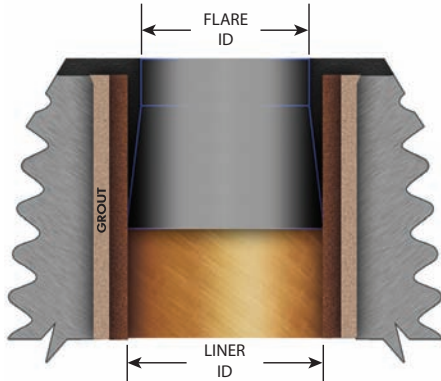
Duoline provides a low cost life cycle corrosion protection system. It can be used with standard EUE and with premium tubing connections. Liners can be installed in both new and used tubing. Duoline lined tubing with rig damaged or worn threads and couplings can be refurbished without sending the pipe back to the coating plant for “burn, blast and recoating”.

Lower Cost Alternative to IPC and CRA Tubulars

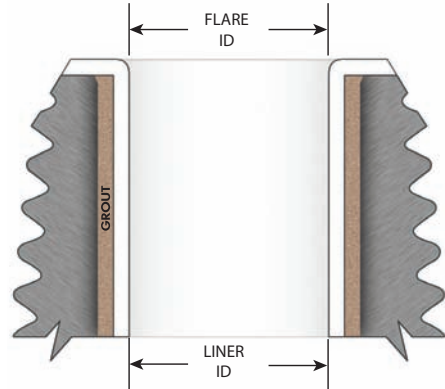
Duoline has been used extensively in CO₂ and acid gas applications. Duoline’s proven durability will provide a lower cost life cycle alternative to IPC Coated Tubing. It also provides an effective, lower cost alternative to the use of CRA (Corrosion Resistant Alloy) tubing.



Specifications



DUOLINE 20



DUOLINE 10

Dimensions, Weights and Capacities

DUOLINE 20, Fiberglass Epoxy Liner

Tubing Size, EUE 8-rd	Tubing Weight, Nominal	Tubing Weight, with DUOLINE	Liner Diameter	Flare Diameter	Drift Diameter	Tubing Fill
60.3 mm 2-3/8 inch	6.99 kg/m 4.7 lb/ft	7.74 kg/m 5.2 lb/ft	45.97 mm 1.810 inch	44.45 mm 1.750 inch	38.10 mm 1.500 inch	0.166 m ³ /100 m 3.183 bbl/1000 ft
73.0 mm 2-7/8 inch	9.67 kg/m 6.5 lb/ft	10.41 kg/m 7.0 lb/ft	57.18 mm 2.251 inch	55.75 mm 2.195 inch	49.40 mm 1.945 inch	0.257 m ³ /100 m 4.93 bbl/1000 ft
88.9 mm 3-1/2 inch	13.84 kg/m 9.3 lb/ft	15.03 kg/m 10.1 lb/ft	69.85 mm 2.750 inch	67.82 mm 2.670 inch	61.47 mm 2.420 inch	0.383 m ³ /100m 7.34bbl/1000 ft
114.3 mm 4-1/2 inch	17.26 kg/m 11.6 lb/ft	19.50 kg/m 13.1 lb/ft	93.75 mm 3.691 inch	91.44 mm 3.600 inch	85.09 mm 3.350 inch	0.69 m ³ /100 m 13.23 bbl/1000 ft
139.7 mm 5-1/2 inch	25.30 kg/m 17.00 lb/ft	27.98 kg/m 18.8 lb/ft	114.81 mm 4.520 inch	111.76 mm 4.400 inch	105.41 mm 4.15 inch	1.035 m ³ /100 m 19.84 bbl/1000 ft
177.8 mm 7.0 inch	38.69 kg/m 26.00 lb/ft	42.41 kg/m 28.5 lb/ft	149.86 mm 5.900 inch	146.94 mm 5.785 inch	140.59 mm 5.535 inch	1.751 m ³ /100 m 33.58 bbl/1000 ft

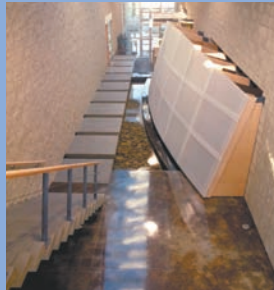
Other Sizes Available

DUOLINE 10, PVC Liner

Tubing Size, EUE 8-rd	Tubing Weight, Nominal	Tubing Weight, with DUOLINE	Liner Diameter	Flare Diameter	Drift Diameter	Tubing Fill
60.3 mm 2-3/8 inch	6.99 kg/m 4.7 lb/ft	7.74 kg/m 5.2 lb/ft	45.21 mm 1.780 inch	45.21 mm 1.780 inch	41.91 mm 1.65 inch	0.162m ³ /100 m 3.078 bbl/1000 ft
73.0 mm 2-7/8 inch	9.67 kg/m 6.5 lb/ft	10.41 kg/m 7.0 lb/ft	55.37 mm 2.180 inch	55.37 mm 2.180 inch	52.07 mm 2.055 inch	0.241 m ³ /100 m 4.71 bbl/1000 ft
88.9 mm 3-1/2 inch	13.84 kg/m 9.3 lb/ft	15.03 kg/m 10.1 lb/ft	68.58 mm 2.700 inch	68.58 mm 2.700 inch	64.77 mm 2.550 inch	0.369 m ³ /100 m 7.076 bbl/1000 ft

Technical Support

Backed by field case histories and laboratory testing results, Duoline technical staff can assist in picking the right liner for your application. Service technicians are available to provide optimal installation of Duoline Products.



Providing innovative solutions to the
oil and gas industry for more than 50 years

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