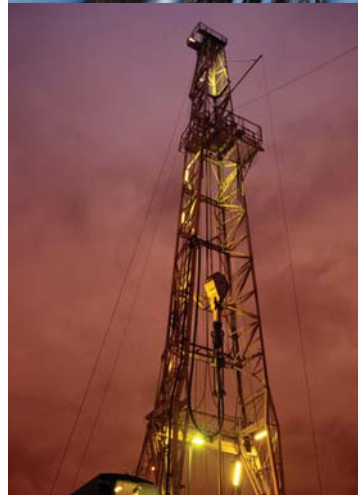


# DUOLINE<sup>®</sup> 20

**MAXTUBE**  
L I M I T E D

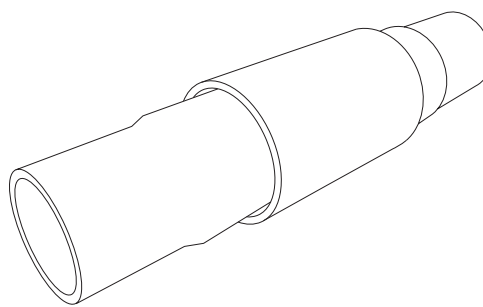


Increasing Tubular  
Life & Performance

[www.maxtube.com](http://www.maxtube.com)



Over 30 years of  
proven field history



## DUOLINE® 20

When corrosion starts in downhole tubing, the string soon fails. The result is downtime and increased operation costs for workovers and tubing pulls.

DUOLINE provides the following SAVINGS:

- Rig time & cost
- Manpower time & cost
- Costly Chemical Treatments
- Workover time & cost
- Expensive chrome or alloy completions

The DUOLINE system, developed by Duoline Technologies in 1965, has proven to be the most successful solution for the prevention of downhole tubular corrosion. The DUOLINE system ensures the isolation of corrosive oilfield fluids and gases from the steel, thereby preventing corrosion of steel tubing and line pipe. DUOLINE is the only fibreglass-epoxy lining system in the market place today with over 30 years of accumulated field history and over 80 million feet installed worldwide.

### Design Features

- API & Premium Downhole Connections
- Wireline Resistant
- Holiday Free
- High Hoop Strength
- Special Epoxy Resin
- No Special Handling Necessary
- Can be installed in New & Used Pipe
- Lining can be carried out in any location
- Increases tubular life and performance
- Cost effective

### Product Description

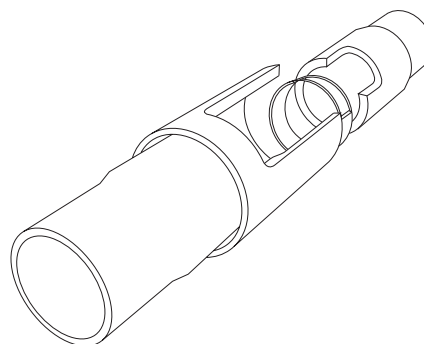
DUOLINE 20 is a GRE (glass reinforced epoxy) composite liner engineered with a special resin system developed exclusively for Duoline Technologies in 1971.

The DUOLINE 20 liner is manufactured using a filament winding and high temperature cure process.

DUOLINE 20 is then inserted inside carbon steel tubing, combining the high strength of steel with the inert properties of fibreglass to provide effective, long lasting corrosion protection.



Over 80 million feet installed worldwide



MaxTube's field service:

- Running/ Pulling DUOLINE products in the well
- Inspection of DUOLINE stock or used DUOLINE joints

## Performance Capabilities

- Temperature: Up to 250°F / 121°C
- Working Pressure: Full working pressure of the lined steel pipe
- Duoline has a better flow profile than steel pipe.
  - The very smooth internal bore of Duoline causes much less overall friction loss than that of new bare steel;
  - "Hazen & Williams" C-Factor: C=150

## Portable Lining Units (PLUs)

MaxTube has transformed the DUOLINE installation process by making it completely portable with the MaxTube Portable Lining Units (PLUs). No purpose built facility is required. MaxTube can line pipe throughout the world in any location, including customer's own yards and facilities or directly at the mill.

PLU's Benefits include:

- Eliminates the need for pipe to be sent to specific locations
- Reduces transport time and costs
- Allows companies to utilise their existing pipe stock or used pipe

DUOLINE is available in several grades, including DUOLINE 20 and DUOLINE 35. All are designed to provide a solution for all oil and gas field corrosion problems. In addition, we also offer the revolutionary Weldshield® system, which allows the DUOLINE range of lining systems to be used in welded pipelines and flowlines.

## Applications

DUOLINE 20 has an outstanding performance history, both onshore and offshore, in demanding environments containing produced fluids and gasses with CO<sub>2</sub> and H<sub>2</sub>S.

- CO<sub>2</sub> Injection Fields (WAG)
- Waterflood Injection Fields
- Deep Gas Production Wells
- Gas Lifted Oil Production Wells
- Shallow Brine Water Disposal Wells
- Deep-Hot-Gas Production Wells
- Chemical Disposal Wells
- Sour Gas Services

## Application Criteria

The criteria listed below are the minimum information required by MaxTube to select the correct DUOLINE product for any proposed applications.

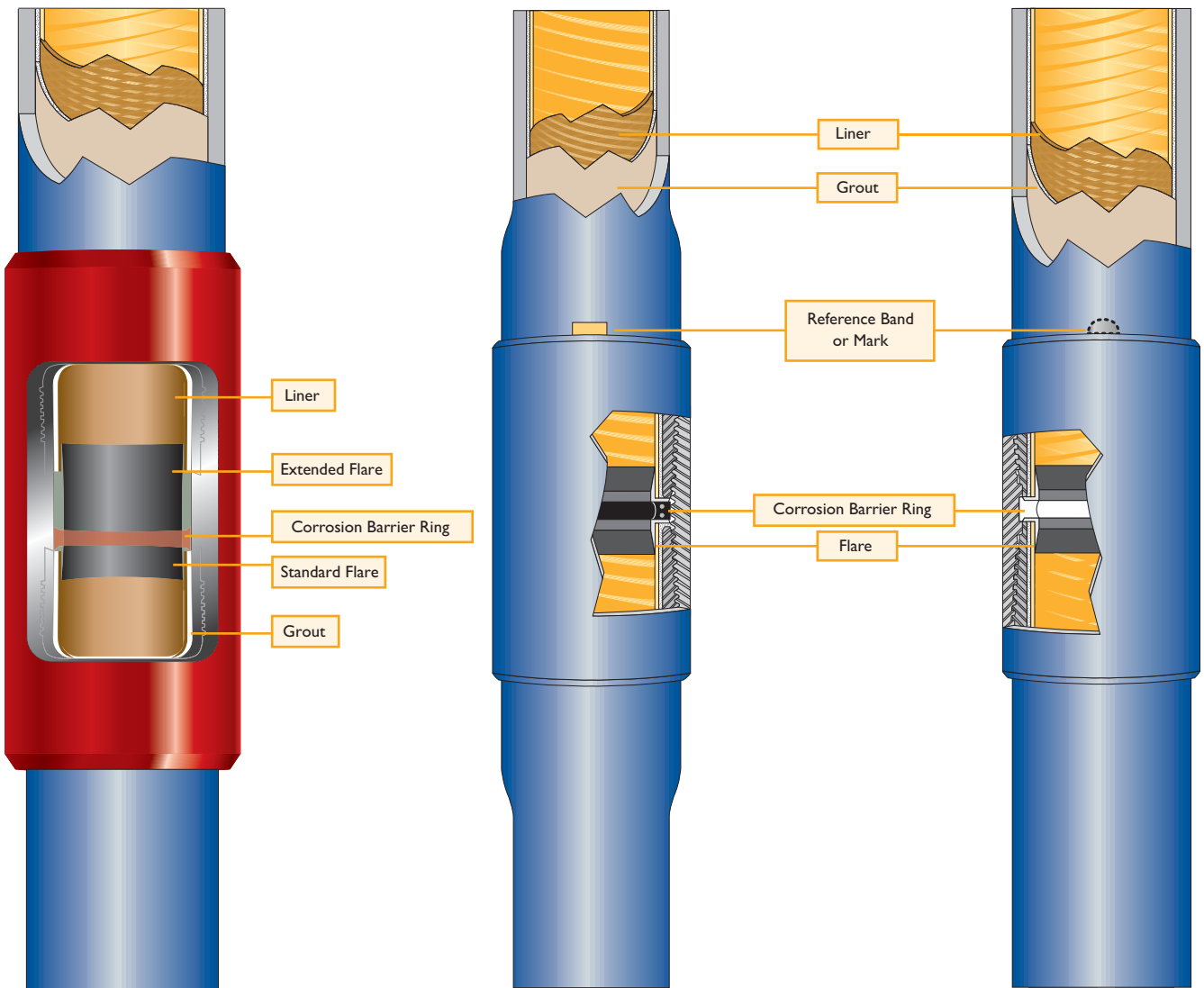
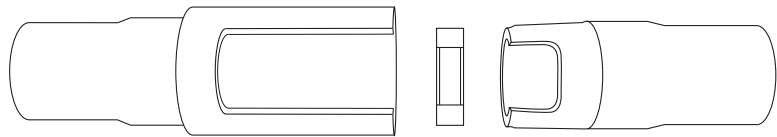
- Tubing size
- Tubing connection
- Well fluid
- H<sub>2</sub>S content
- CO<sub>2</sub> content
- BHT

Please visit [www.maxtube.com](http://www.maxtube.com) or contact us for a DUOLINE Selection Form.

DUOLINE products offer an unsurpassed record for prevention of corrosion in very demanding conditions.



DUOLINE is available  
in several grades



### Premium Connections

The Duoline DL-Ring System is a revolutionary new system which allows lining of all Premium Connections without the need for modification of the connection

### API Connections

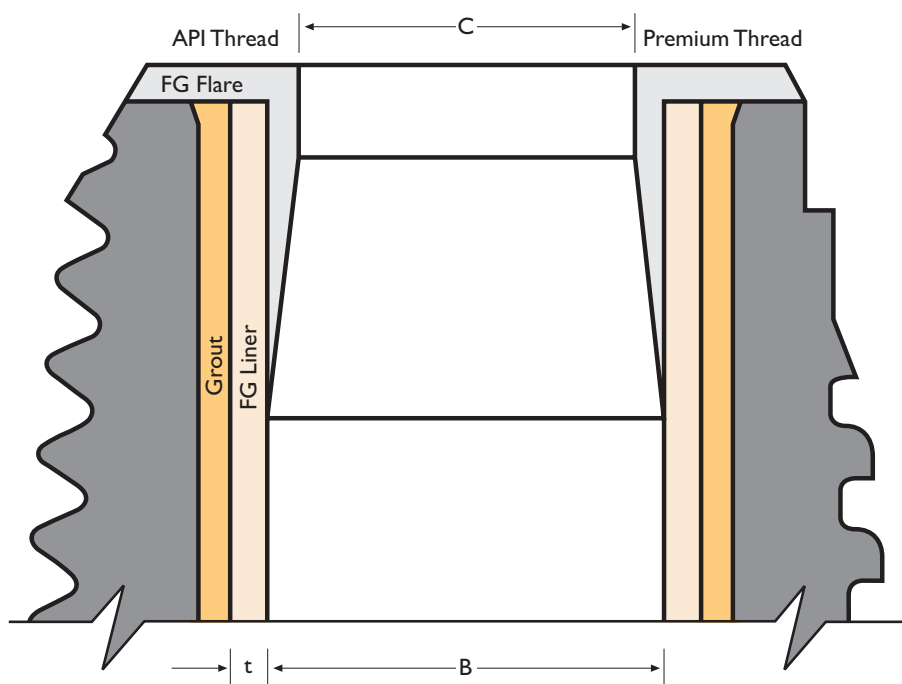
Corrosion Barrier Ring - Duoline Technologies manufactures metal reinforced elastomer rings for API Connections.

### Modified Premium Connections

Corrosion Barrier Rings - glass reinforced PTFE rings are available for all Modified Premium Connections.



## DUOLINE 20 Dimensions and Weights



### Common DUOLINE Tubing Sizes (other sizes also available)

Pipe Size and Weight/foot		B	C	t	Normal Lining Weight lb/Ft
		Fibreglass Liner Inside Diameter	Fibreglass Flare Inside Diameter	Fibreglass Liner Nominal Thickness	
2-1/16"	3.2ppf	1.500"	1.430"	0.040"	0.40
2-3/8"	4.7ppf	1.810"	1.750"	0.040"	0.50
2-7/8"	6.5ppf	2.251"	2.195"	0.040"	0.50
3-1/2"	9.3ppf	2.750"	2.670"	0.045"	0.80
4-1/2"	11.6ppf	3.691"	3.600"	0.060"	1.50
5"	15 ppf	4.142"	4.032"	0.065"	1.65
5"	18 ppf	4.010"	3.900"	0.065"	1.65
5-1/2"	15.5ppf	4.675"	4.550"	0.075"	1.80
5-1/2"	17/20ppf	4.520"	4.400"	0.075"	1.80
5-1/2"	23ppf	4.395"	4.275"	0.075"	1.80
7"	23ppf	6.091"	5.976"	0.095"	2.50
7"	26ppf	5.900"	5.785"	0.095"	2.50
7"	29/32ppf	5.800"	5.685"	0.095"	2.50
10-3/4"	60.7ppf	9.170"	9.010"	0.155"	6.50

Maximum Drift Diameter:

For API Connections with Duoline Technologies CBR: 1/4" less than Flare Diameter  
 For Premium Connections with PTFE CBR: 1/8" less than Flare Diameter

Major **DUOLINE** users include :



ANADARKO



AMERADA HESS



BHP



BP



BRITISH GAS



CHEVRONTEXACO



CANADIAN NATIONAL RESOURCES



EXXONMOBIL



KHALDA PETROLEUM



KUWAIT OIL COMPANY



NORSK HYDRO



OCCIDENTAL



PETROLEUM DEVELOPMENT OMAN



QARUN PETROLEUM



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SAUDI ARAMCO



SHELL



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