

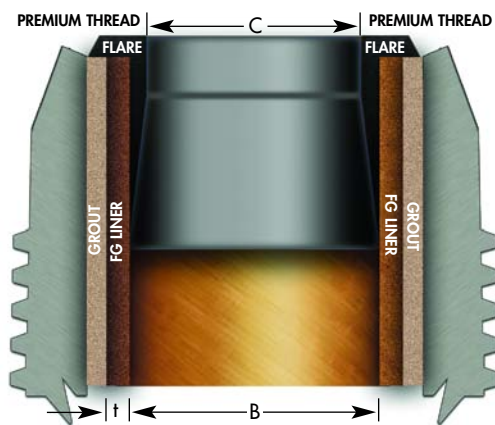


**DUOLINE® COUPLED WITH
API AND PREMIUM GAS TIGHT CONNECTIONS
for Demanding Applications**



Duoline Plant, Odessa, Texas

**DUOLINE® DIMENSIONS AND WEIGHTS
For Premium Connections**



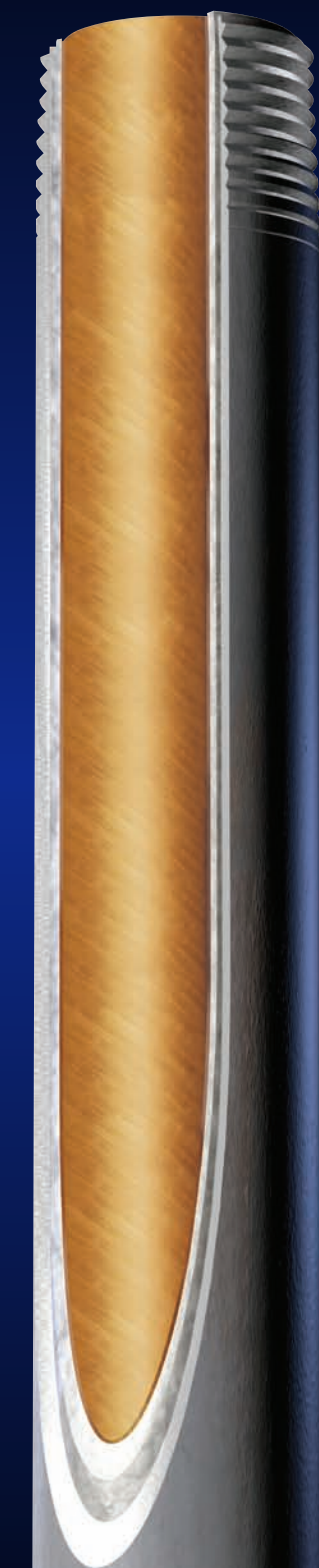
DUOLINE® 20 in VAM® Connections						
Connection Type	Pipe Size (inches)	Pipe Wt. (lbs/ft)	B Fiberglass Liner ID (inches)	C Minimum DL-System Restricted ID (inches)	t D-20 Nominal Thickness (inches)	Nominal Lining Wt. (lb/ft)
NEW VAM®	4-1/2"	12.60	3.691	3.594	0.060	1.50
NEW VAM®	5"	18.00	4.010	3.893	0.065	1.65
NEW VAM®	7"	26.00	5.900	5.779	0.096	2.50
NEW VAM®	7"	29.00	5.800	5.678	0.094	2.50
VAM® TOP	4-1/2"	12.60	3.600	3.506	0.058	1.50
VAM® TOP	5"	18.00	4.010	3.893	0.065	1.65
VAM® TOP	5-1/2"	17.00	4.520	4.394	0.073	1.80
VAM® TOP	5-1/2"	20.00	4.520	4.394	0.073	1.80
VAM® TOP	6"	18.60	5.036	4.915	0.082	2.00
VAM® TOP	7"	23.00	5.900	5.778	0.096	2.50
VAM® TOP	7"	26.00	5.900	5.778	0.096	2.50
VAM® TOP	7"	29.00	5.800	5.678	0.094	2.50
VAM® TOP	7"	32.00	5.800	5.678	0.094	2.50
VAM® TOP	9-5/8"	47.00	8.260	8.078	0.134	
VAM® TOP	10-3/4"	60.70	9.160	9.003	0.149	
VAM® TOP HT/HC	4-1/2"	12.60	3.600	3.506	0.058	1.50
VAM® TOP HT/HC	5-1/2"	17.00	4.520	4.394	0.073	1.80
VAM® TOP HT/HC	5-1/2"	20.00	4.395	4.268	0.071	1.80
VAM® TOP HT/HC	7"	29.00	5.800	5.685	0.094	2.50
VAM® TOP HT/HC	7-5/8"	33.70	6.400	6.273	0.104	2.60

Please contact **Duoline® Technologies** Technical Support for Premium Connections, Drift diameters and Premium Connections not listed.



**FOR COMPLETE DETAILS ABOUT OUR EXPANDED FACILITIES
AND NEW CAPABILITIES LOGON TO www.duoline.com**

DUOLINE® TECHNOLOGIES Bluebird Lane & Highway 271 Gilmer, TX 75644 Phone: 903.734.1371 Fax: 903.734.1571
9019 North County Road West Odessa, TX 79764 Phone: 432.552.9700 Fax: 432.552.9701
Web-site: www.duoline.com

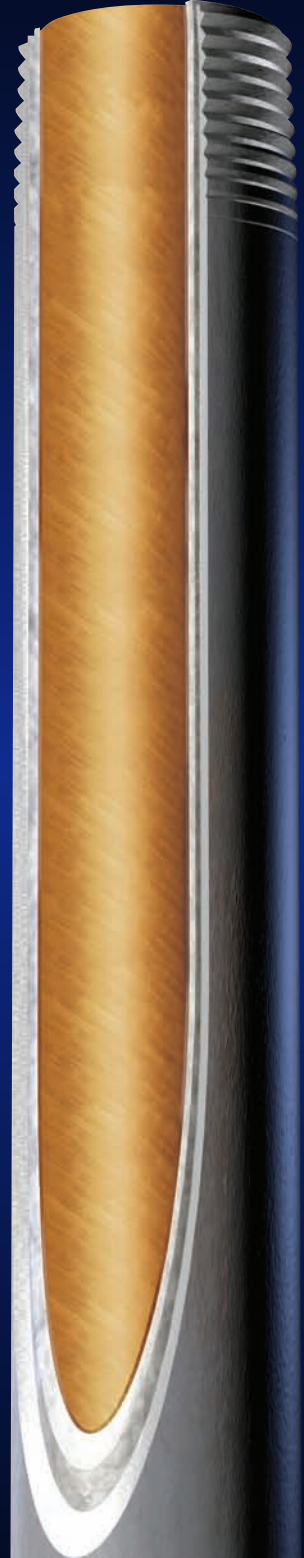


Duoline® lining systems extend the life of your tubulars



Duoline® lining systems extend the life of your tubulars





DUOLINE® stops corrosion where other systems fail! RESULT: Bottom line savings through fewer well interventions.

When corrosion starts in downhole tubing, the string soon fails. The result is downtime and increased operation costs for workovers and tubing pulls. **DUOLINE®** stops corrosion where alternative lining or coating systems soon fail.

The unique process of inserting a rigid plastic liner sleeve inside the pipe eliminates the “holiday” potential created by IPC coating processes. A grouting layer of cement material is placed in the annular space under pressure using a tightly controlled process. The **DUOLINE®** process does not depend on bonding or adherence of the liner to the steel pipe wall. This benefit, combined with the high hoop strength of the GRE liners provides the most resilient lining system for high-pressure gas service or water systems with high CO₂ or H₂S content.

Whether the job calls for new steel tubing with premium gas tight connections, or reclamation of used tubing with API type threads, **DUOLINE®** can be applied to satisfy a wide range of applications and customer needs.

DUOLINE® has a reputation as “The Lining of Choice” in CO₂ injection and waterflood injection fields. Deep gas production and gas-lifted oil production wells have also been a target application for use of the **DUOLINE®** lining system.

This unique lining process, developed by Duoline Technologies in 1965, has proven to be the most successful system for the prevention of downhole tubular corrosion. In fact, Duoline Technologies has installed **DUOLINE®** in over 75 million feet of tubing, with unmatched performance. **DUOLINE®** products and services are readily available for applications throughout the world. Duoline Technologies offers several liner selections that match material performance in your specific application. The **DUOLINE®** liners offer solutions to nearly all downhole environments from shallow brine water disposal wells to deep-hot-gas production in both onshore and offshore wells.

A most important consideration for any corrosion resistant piping system is protection of the connection area, which is the strength of the **DUOLINE®** process. After all, what benefit is realized from a premium pipe coating or lining that permits connection corrosion? Most coated tubing corrosion failures originate in the connection area. Duoline Technologies employs a reinforced elastomeric corrosion barrier ring (CBR), which is compressed between the liners in the connection make-up process. This compressed CBR is held in place by the liner, and prevents passing fluids from causing the all-too-common coupling failure. Duoline Technologies manufactures a metal wire reinforced nitrile elastomer ring for API connections. A fiberglass reinforced PTFE ring is available for almost any premium gas tight connection.

Duoline Technologies recommends the presence of a trained **DUOLINE®** technician when **DUOLINE®** is installed or repaired at the well site. A staff of qualified technicians is available at our Duoline Technologies Odessa, Texas manufacturing facility. In addition, a number of service companies throughout the world have technicians who have been trained by Duoline Technologies to run or repair **DUOLINE®**

Advanced Duoline® Liner Systems

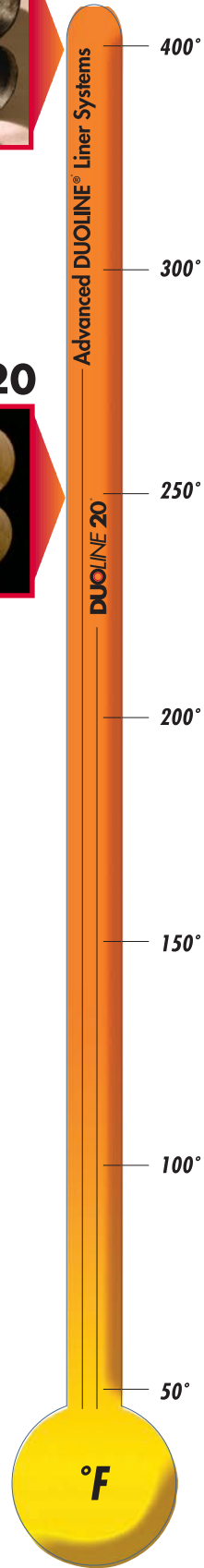


Up to 400°F

DUOLINE® 20



Up to 250°F



ADVANCED DUOLINE® LINER SYSTEMS

Advanced DUOLINE® Liner Systems:

For temperatures up to 400°F (205°C) and unlimited H₂S or CO₂ contents

DUOLINE® products benefit from accumulated years of experience in application of modern advanced thermoplastic and thermoset resin processing technologies to provide custom designed liner solutions for very unique applications. In today's complex and widely varying downhole production and injection conditions, a “one size fits all” liner design is not practical. When temperatures, pressures, or chemical compositions require a corrosion solution beyond the well established capabilities of the **DUOLINE® 20** product line, rely on one of the advanced **DUOLINE®** liner systems to reduce the high cost of your corrosion challenge. These applications typically require a chrome or CRA material solution; this type of material selection can cause excessive time delays, add excessive cost, and potentially exceed a project budget or timeline. Take the 40-year proven corrosion prevention capabilities of **DUOLINE®** lining systems to your most demanding environment.

Contact **Duoline® Technologies** Technical Support for additional information about Advanced **DUOLINE®** Liner Systems.

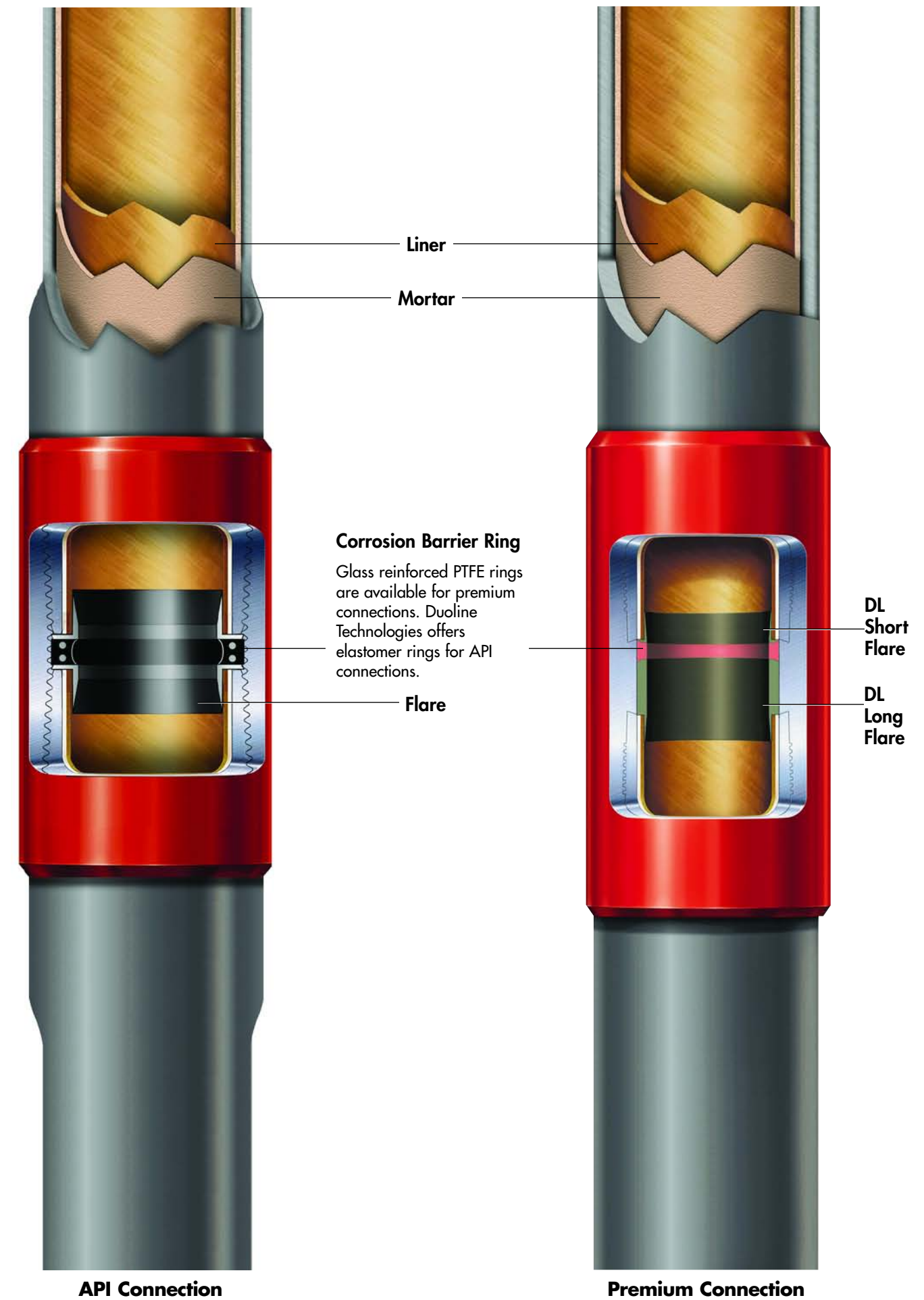
DUOLINE® 20

The workhorse of the **DUOLINE®** lining systems. **DUOLINE® 20**, developed by Duoline Technologies in 1971, is targeted for more demanding corrosive downhole environments. The **DUOLINE® 20** system has a proven track record in a great number of demanding environments including water injection, CO₂ injection, gas production, gas-lifted oil production and chemical disposal wells, onshore and offshore.

DUOLINE® 20 has an outstanding performance history in environments containing produced fluids and gasses with CO₂ and H₂S. **DUOLINE® 20** has successfully prevented corrosion in gas production wells with BHT as high as 292°F (144°C), and is typically used in water injection and gas production service up to 250°F (121°C).

The **DUOLINE® 20** liner is fabricated exclusively by Duoline Technologies. The liner is a GRE composite (glass reinforced epoxy resin system) manufactured with a filament winding and high temperature cure process. The only fiberglass-epoxy lining system in the marketplace today with over 33 years of accumulated field history. Duoline Technologies and **DUOLINE® 20** have pioneered the trend for fiberglass-liner acceptance around the world. **DUOLINE® 20** is manufactured and available in a number of international locations.

DUOLINE® 20 has proven to be the most abrasion resistant coating or lining product in downhole wireline trials in deviated wells. It is acid compatible, impact resistant, resistant to gas service failures common to other coatings or linings, premium connection compatible, chemically resistant and tolerant to common tension and bending loads. Quite simply, **DUOLINE® 20** offers unsurpassed corrosion protection by a lining system.



API Connection

Premium Connection