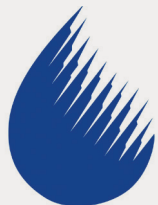




# HORIZON LATERAL PIPELINE PIPE OPTIONS AT A GLANCE

Steel | Bar-wrapped | TPG FRP



SOUTHERN NEVADA  
WATER AUTHORITY



**BLACK &  
VEATCH**

# STEEL

Steel pipe offered with various coatings and linings.



Steel welding



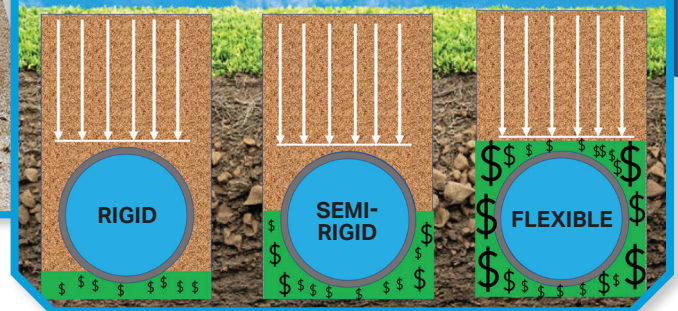
# BAR WRAPPED

## BEDDING AND BACKFILL

**Rigid vs. Flexible Pipe Installation:** The total cost of a project includes more than the pipe. Importing bedding and backfill increases expense. Bar-wrapped pipe is semi-rigid and may require less imported backfill than flexible pipe options.



## PIPE DESIGN



## JOINT RESTRAINT

Concrete pressure pipe offers ease of installation. A Snap Ring® is a one-bolt tightening system. Additionally, a harness clamp offers high pressure restraint with two or four bolts based on pipe type.



Snap Ring® – Harness Clamp – Standard Joint



# TPG FRP

## FIBERGLASS PIPE OFFERS NUMEROUS ADVANTAGES:

- ▶ Inherently corrosion resistant; no need for cathodic protection and no maintenance of coatings and linings
- ▶ Lightweight – reduces transportation costs, customizable joint lengths up to 40', ease of installation
- ▶ Proven gasketed joint with 50 years of performance history in pressure classes up to 450 psi
- ▶ Multiple restraint options



▶ Keylock



▶ Lamination

▶ FRP/Steel combination



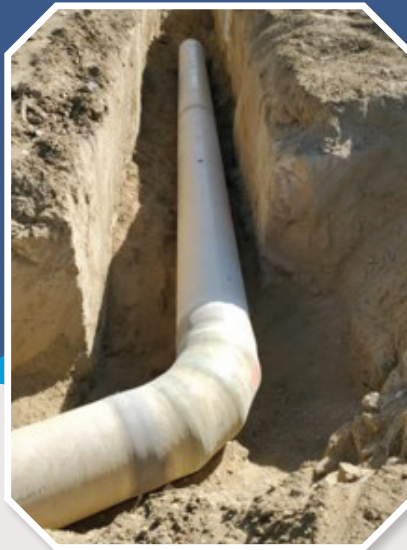
# PRESSURE PROJECTS AT A GLANCE

## COLUMBIA IRRIGATION DISTRICT

Location: Northeast Oregon

Details: 39,000 LF of 72" and 75" FRP  
with steel fittings, 180 psi

Originally specified for steel pipe, Thompson Pipe Group value engineered this pressure project utilizing a unique TPG FRP and steel combination design. With the elimination of cathodic protection and an accelerated installation schedule, the owner saved more than \$3 million.



## GALLERIA

Location: Henderson, Nevada

Details: 3,500 LF of 30" FRP, 300 psi

Corrosive soils led to the specification and installation of TPG FRP. FRP has multiple restraint options, but engineers selected joint lamination, a process similar to welding steel pipes.



## VISTA RIDGE

Location: San Antonio, Texas

Details: 150 miles of 54" and 60" bar-wrapped  
(C303) and steel pipe, respectively

Thompson Pipe Group manufactured and delivered bar-wrapped and steel pipe for the largest public-private partnership in North America. The San Antonio Water System (SAWS) used bar-wrapped pipe for pressure planes of 200 psi and lower. Steel was used for planes of 225 psi and greater.



[ThompsonPipeGroup.com](http://ThompsonPipeGroup.com)

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