

WATER WELL PERFORMANCE

Economic Significance of Corrosion Resistance Flexible Drop Pipe in Water Wells



New World • New Thinking • New Solutions

Layflat Hoses



Factory



Circular Loom

Through the weave Extrusion



Products



Fuel Hose for Military



Slurries and Dredging



O&G Fracking



Snow Making

Mine Dewatering



Flexible Drop Pipe

Used to hang a Submersible pump in a Water well

- Polyurethane and High Tenacity Fibers
- 100% Lead Free



Where is it used?

- Water Utilities
- Residential
- Agricultural
- Industrial
- Mining
- ASR
- Testing



Drop Pipe Choices

- Steel
- PVC
- HDPE (Polypipe)
- Flexible Drop Pipe





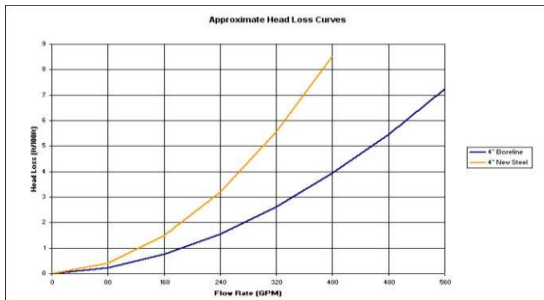
Flexible Drop Pipe VS. Steel Pipe



Tensile Strength

Nominal Size	1	1 ½	2	3	4	5	6	8
Theoretical Tensile Strength (Pounds)	3,000	7,000	9,000	16,000	26,000	33,000	44,000	46,000

Minimal Head Loss 4"



Internal Growth and Corrosion



Installed 1994 Removed 2009



PSI & Depth Settings

Nominal Size	1"	1 ½"	2"	3"	4"	5"	6"	8"
Burst Pressure (psi)	980	920	920	850	820	800	800	600
Working Pressure (psi)	500	425	425	350	300	310	310	210
Maximum Depth Setting (feet)	1200	1100	1000	900	800	750	700	400

Shipping and Handling



Weight Chart

(Ease of transport, install, and storage)

Nominal Size	1"	1 1/2"	2"	3"	4"	5"	6"	8"
Weight of Boreline (pounds per foot)	.14	.22	.37	.64	.94	1.14	1.68	2.3
Weight for 100'	14	22	37	64	94	114	168	230



Stainless Steel Fittings



- SS 316,
- Two Rings
- 3 Segment Clamps
- Re-useable
- Field Attachable
- Standard NPT thread



GRN Fitting



Fitting Compatibility



Joiners



Securing the Power Cable



Securing the Power Cable



Check Valve w/Break-off Plug



Cumbersome

Installation and Removal of steel pipe



Installation Techniques

Horizontal



Vertical



Vertical Installation

What is needed?

- Lifting Clamps
- Pulling Rig



Vertical Installation



Vertical Installation



- What is needed?
- Lifting Clamps
 - Pulling Rig
 - Rolling Wheel

Horizontal



Horizontal Installation



750' x 3" in 8 Minutes



Horizontal Installation 650' of 5"



Shallow Depths By Hand



Pump Pullers



Pump Pullers

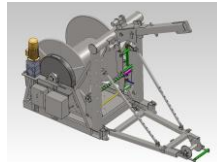


Pump Puller



BPP 2.0

- Boreline 4" down to 800ft
- 5" and 6" down to 350ft



550' of 3" Flexible Drop Pipe



ROI & Boreline Savings

- Time Savings
- Totally Non-corrosive
- 50 year warranty
- Pipe Replacement Costs
- Longer pump life
- Energy Efficient
- Safety
- Water Quality



Why do you not do Preventative Maintenance?



Maintenance

This is now an option!



Pulling 750' of 3"



Preventative Maintenance



Why Rehabilitate a Well ?

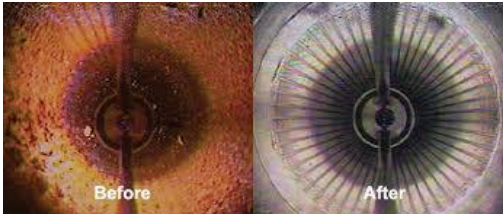


Call the Professionals



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Maximum Flow/Efficiency



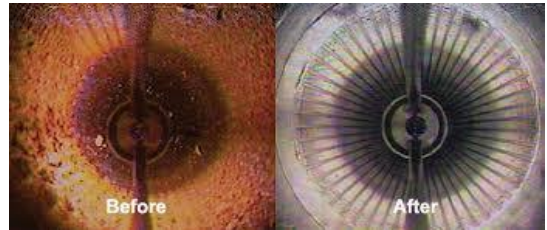
What's Next



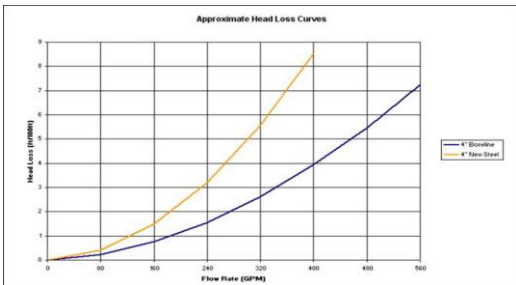
Is this the Safest and Most efficient choice?



Why did you invest in Rehab?



Achieve Maximum Flow and Reduce Energy Cost!



Internal Growth and Corrosion



NEVER AGAIN!



HoseSolutions Inc

Flexible Drop Pipe



- Rehab and Maintenance is Possible
- Minimal Head loss
- Energy Efficient
- Saves on Electricity, Installations and Retrieval
- Corrosion Resistant
- Maintain Maximum flow for the life of the well
- Longer Pump life
- Easy Installation
- 50 Year Warranty

“You are not the Guinea Pig”



History of Flexible Drop Pipe

- Boreline has been a product since 1990
- Has been used in the U.S.A. since 2000
- Hose Solutions Inc. has had an office in Arizona since 2001
- We have 2 Factories, one in Australia, and one in South Africa
- It has been installed in over 40 states and 50 countries
- Even The Military and NASA have used Flexible Drop Pipe

Completed Projects

- Phelps Dodge Miami, AZ
- Hargis & Associates, CA
- Clearlake, CA
- Gila Bend Power Station, AZ
- Kokomo, IN
- Platinum Mine
- NASA White Sands, NM
- Caltrans, CA
- ChevronTexaco, CA
- Las Vegas, NV
- Tohono O'odham Utility Auth, AZ
- Town of Fredonia, AZ
- Puls Farms, CA
- Entranosa Water Co, NM
- Aggressive Water
- Iron Bacteria
- Domestic
- Restricted Access
- Acidic Water
- 296 HP, 1500 GPM
- Environmental
- Slope Stabilization
- Ground Water
- Contaminated Water
- Potable Water
- Site Access Problems
- Agriculture
- Potable Water



References

- LADWP – Kelvin Hoang – (760) 873 0259
- City of Santa Barbara - Brett Wieser – (805) 897 2625
- Cobb Area Water, CA – Robert Stark – (707) 928 5262
- City of Amarillo, TX - Kenneth McColl – (806) 673 4631
- Barrick Gold, NV – Scott Conley – (775) 468 4081
- CAFarming, CA - Bob Puls – (559) 783 4148
- Kinder Morgan, CA – Hoyt Ryales – (619) 517 5593
- Ortman Drilling, IN – Rick Ortman – (765) 438 2278
- Technosub, QC – Patrick Martel – (819) 797 3300



Approvals

- NSF 61 Potable Water Certification
- MSHA
- WRAS (WRc)
- BS 6920:1996
- AWQC Australian Water Quality Centre
- ISO 9001 - 2000 SABS



Thank you

