

## Bulletin PP-901

### Pressure Surge

When there is a sudden change in liquid flow velocity, a pressure surge will occur. With its unique ductile elastic properties, DriscoPlex® pipes have high tolerance for surge cycles. The low elastic modulus also provides a dampening mechanism for shock loads. For the same water velocity change, surge pressures in DriscoPlex® polyethylene pipe are about 86% less than in steel pipe and about 50% less than in PVC pipe. Unlike other plastic and metal pipes, surge pressures in DriscoPlex® HDPE pipe are *above* the working pressure capacity of the pipe.

**Table 6 Surge Allowance at 80°F or less per ASTM F714**

DR	PR, psi	Recurring Surge Events	
		Allowable Total Pressure During Surge, psi	Corresponding Sudden Velocity Change, fps
21	100	150.0	5.0
17	125	185.0	5.3
13.5	160	240.0	6.3
11	200	300.0	7.0
DR	PR, psi	Occasional Surge Events	
		Allowable Total Pressure During Surge, psi	Corresponding Sudden Velocity Change, fps
21	100	200	10.0
17	125	250	11.1
13.5	160	320	12.6
11	200	400	14.0

- Surge allowance is available only for surge events. Surge allowance is applied above the working pressure; therefore, it cannot be used to increase continuous internal pressure capacity above that permitted by the working pressure.
- PR, pressure rating, and surge allowance are per ASTM F714 and for PE4710 pipes. See Appendix A of PP501 for PC, pressure class, per AWWA C906.