

# PVC

# PRESSURE PIPE STANDARDS FOR WATER MAINS

Standard	Performance Designation	Nominal Diameter Range	Outside Diameter Type	Pressure Class (PC) Pressure Rating (PR)	Safety Factor (SF)	Available Joint Systems
AWWA C900: PVC Pressure Pipe	Pressure Class (PC)	4" – 60"	Cast Iron Outside Diameter (CIOD) or Iron Pipe Size (IPS)	PC 80 psi – DR51 PC 100 psi – DR41 PC 125 psi – DR32.5 PC 150 psi – DR27.5 PC 160 psi – DR26 PC 165 psi – DR25 PC 200 psi – DR21 PC 235 psi – DR18 PC 250 psi – DR17 PC 305 psi – DR14	2.0	Gasket - Unrestrained Joint Gasket - Restrained Joint Butt Fusion
<b>AWWA C905</b> : REPLACED WITH NEW AWWA C900 STANDARD EFFECTIVE AUGUST 2016 (SEE ABOVE)						
AWWA C909: PVC Pressure Pipe	Pressure Class (PC)	4" – 30"	Ductile Iron Outside Diameter (DIOD)	PC 165 psi PC 235 psi PC 305 psi	2.0	Gasket - Unrestrained Joint Gasket - Restrained Joint
ASTM D2241: PVC Pressure Pipe	Pressure Rating (PR)	1/8" – 36"	Plastic Irrigation Pipe (PIP) or Iron Pipe Size (IPS)	PR 50 psi – DR81 PR 63 psi – DR64 PR 80 psi – DR51 PR 100 psi – DR41 PR 118 psi – DR35 PR 125 psi – DR32.5 PR 160 psi – DR26 PR 200 psi – DR21 PR 250 psi – DR17 PR 315 psi – DR13.5 PR 400 psi – DR11	2.0	Gasket - Unrestrained Joint Gasket - Restrained Joint Solvent Cement Butt Fusion
ASTM F1483: PVC Pressure Pipe	Pressure Rating (PR)	4" – 16"	Cast Iron Outside Diameter (CIOD) or Iron Pipe Size (IPS)	PR 150 PR 160 PR 200 PR 250	2.0	Gasket - Unrestrained Joint Gasket - Restrained Joint

**Note:**

1. All PVC pipe pressure capacities are for PVC compound with cell class 12454 and Hydrostatic Design Stress (HDS) = 2,000 psi.
2. All PVC pipe starting stock is PVC compound with cell class 12454 and Hydrostatic Design Stress (HDS) = 2,000 psi; finished pipe has HDS = 3,550 psi.
3. Safety factor (SF) is the inverse of design factor (DF). All standards use SF = 2.0 or DF = 0.5.
4. Not all pressure classes/ratings are available in all OD types. Check with pipe manufacturer for specific product availability.
5. ASTM D2241 Annex provides PIP outside-diameter regimen.
6. Ductile iron pipe size = cast iron pipe size; abbreviations: DIOD = DIPS = CIOD = CIPS
7. External restraint devices are available for PVC and PVCPO products. Consult the restraint manufacturer.