

PVC

PRESSURE PIPE STANDARDS FOR SEWER FORCE MAINS

Standard	Performance Designation	Nominal Diameter Range	Outside Diameter Type	Pressure Class (PC) Pressure Rating (PR)	Safety Factor (SF)	Joining System Type
AWWA C900: PVC Pressure Pipe & Fabricated Fittings	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
AWWA C905 : REPLACED WITH NEW AWWA C900 STANDARD EFFECTIVE AUGUST 2016 (SEE ABOVE)						
AWWA C909: PVCO 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
ASTM D2241: PVC Pressure Pipe	Pressure Rating (PR)	1/8" – 36"	Copper Tubing Size (CTS) or 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: PVCO 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 PVCO 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

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