

Pipe & Hangers Technical Information
Physical Properties of PVC & CPVC Pipe

| GENERAL | PVC Value | CPVC Value | Test Method |
|---|------------------------|-------------------------|-------------|
| Cell Classification | 12454 | 23447 | ASTM D 1784 |
| Maximum Service Temp. | 140°F | 200°F | |
| Color | White, Dark Gray | Medium Gray | |
| Specific Gravity, (g/cu.cm @ 73°F) | 1.41 | 1.51 | ASTM D 792 |
| Water Absorption % increase 24 hrs @ 25°C | 0.05 | 0.03 | ASTM D 570 |
| Hardness, Rockwell | 110 - 120 | 117 - 119 | ASTM D 785 |
| Poisson's Ratio @ 73°F | 0.410 | 0.370 | |
| MECHANICAL | | | |
| Tensile Strength, psi @ 73°F | 7,450 | 7,900 | ASTM D 638 |
| Tensile Modulus of Elasticity, psi @ 73°F | 420,000 | 426,000 | ASTM D 638 |
| Flexural Strength, psi @ 73°F | 14,450 | 15,000 | ASTM D 790 |
| Flexural Modulus, psi @ 73°F | 360,000 | 360,000 | ASTM D 790 |
| Compressive Strength, psi @ 73°F | 9,600 | 10,000 | ASTM D 695 |
| Izod Impact, notched, ft-lb/in @ 73°F | 0.75 | 2.9 | ASTM D 256 |
| THERMAL | | | |
| Coefficient of Linear Expansion (in/in/°F) | 2.9 x 10 ⁻⁵ | 3.2 x 10 ⁻⁵ | ASTM D 696 |
| Coefficient of Thermal Conductivity | | | ASTM C 177 |
| Calories • cm/second • cm ² • °C | 3.5 x 10 ⁻⁴ | 3.27 x 10 ⁻⁴ | |
| BTU • inches/hour • Ft.2 • °F | 1.02 | 0.95 | |
| Watt/m/K | 0.147 | 0.137 | |
| Heat Deflection Temperature | | | |
| Under Load (264 psi, annealed) | 170 | 235 | ASTM D 648 |
| ELECTRICAL | | | |
| Dielectric Strength, volts/mil | 1,413 | 1,250 | ASTM D 149 |
| Dielectric Constant, 60Hz, 30°F | 3.70 | 3.70 | ASTM D 150 |
| Volume Resistivity, ohm/cm @ 95°C | 1.2 x 10 ¹² | 3.4 x 10 ¹² | ASTM D 257 |
| Spears® PVC & CPVC Pipe is non-electrolytic | | | |
| FIRE PERFORMANCE | | | |
| Flammability Rating | V-0 | V-0, 5VB, 5VA | UL-94 |
| Flame Spread Index | <10 | <10 | |
| Flame Spread | 0-25 | <25 | ULC |
| Smoke Generation | 80-225 | <50 | ULC |
| Flash Ignition Temp. | 730°F | 900°F | |
| Average Time of Burning (sec.) | <5 | <5 | ASTM D 635 |
| Average Extent of Burning (mm) | <10 | <10 | |
| Burning Rate (in/min) | Self Extinguishing | Self Extinguishing | |
| Softening Starts (approx.) | 250°F | 295°F | |
| Material Becomes Viscous | 350°F | 395°F | |
| Material Carbonizes | 425°F | 450°F | |
| Limiting Oxygen Index (LOI) | 43 | 60 | ASTM D 2863 |

NOTE: The physical properties shown above are considered general for PVC and CPVC.