



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

<b>GENERAL</b>	<b>PVC Value</b>	<b>CPVC Value</b>	<b>Test Method</b>
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	
<b>MECHANICAL</b>			
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
<b>THERMAL</b>			
Coefficient of Linear Expansion (in/in/°F)	2.9 x 10 <sup>-5</sup>	3.2 x 10 <sup>-5</sup>	ASTM D 696
Coefficient of Thermal Conductivity			ASTM C 177
Calories • cm/second • cm <sup>2</sup> • °C	3.5 x 10 <sup>-4</sup>	3.27 x 10 <sup>-4</sup>	
BTU • inches/hour • Ft <sup>2</sup> • °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
<b>ELECTRICAL</b>			
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 <sup>12</sup>	3.4 x 10 <sup>12</sup>	ASTM D 257
Spears® PVC & CPVC Pipe is non-electrolytic			
<b>FIRE PERFORMANCE</b>			
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. Contact Spears® Technical Services for additional information if necessary.